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GEOLOGICAL SURVEY

Bibliography of Well-Log Applications
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by

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This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature

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TABLE OF CONTENTS

TOPIC	PAGE
Introduction.....	ii
Part A: Basic Well Logging.....	1
1. Fundamentals of Well Logging and Well Log Interpretation.....	1
I. Books and Review Papers.....	1
II. Electric Logging and General Formation Evaluation (Including Petrophysics and Case Histories).....	2
III. MWD (Measurement While Drilling).....	19
IV. Cased Hole and Production Logging; Determination of ROS.....	22
V. Acoustic Logging (Including P and S, Full Waveform, Borehole Seismic, and VSP).....	26
VI. Nuclear Logging; Geochemical Logging (Elemental Analysis).....	31
VII. Shaly Sands.....	33
VIII. Borehole Gravimetry.....	35
IX. Permeability Determination from Logs.....	35
X. Borehole Imaging and Applications (Including BHTV, FMS, Radar).....	36
XI. Temperature Logging; Determination of Static BHT; Applications of BHT data; Heat-Flow and Geothermics.....	41
XII. Conditions and Special Situations Affecting Tool Response.....	43
XIII. Crossplot Techniques and Applications.....	44
XIV. Computer and Programmable Calculator Programs for Log Analysis.....	44
XV. Schlumberger International Well Evaluation Conferences.....	44
XVI. Reprint Volumes.....	44
XVII. Bibliographies.....	45
XVIII. Well-Log-Response Charts.....	45
Part B: Applications.....	46
2. General Geological and Geotechnical Applications.....	46
3. Determination of Facies and Depositional Environment.....	51
4. Identification of Depositional Environments by SP and GR Pattern.....	52
5. Dipmeter Applications.....	53
6. Applications of Artificial Intelligence (AI) and Expert Systems.....	53
7. Well-Log Data Processing (Including Log Correlation and Analyses).....	54
8. Natural Gamma-Ray Spectrometry.....	55
9. Organic Carbon and Source Rock Determination.....	56
10. Tight (Low-Permeability) Gas Sandstones.....	56
11. Abnormal Pressure Detection and Evaluation.....	58
12. Oil and Gas Shales.....	59
13. Heavy Oil and Tar Sandstones.....	60
14. Coal and Coalbed Methane.....	60
15. Fracture Detection and Evaluation; Wellbore Breakouts and In-Situ Stress Analysis...61	61
16. Permafrost and Gas Hydrates.....	67
17. Evaporites.....	67
18. Mineral Exploration and Evaluation (Including Uranium).....	67
19. Ground Water Applications.....	68
20. Igneous and Metamorphic Rocks (Including DSDP and ODP results).....	71
21. Geothermal Well-Log Evaluation.....	72
Part C: Listing of Citations by First Author.....	74

Introduction

The purpose of this bibliography is to emphasize the *application* and various uses of well-log data. The topical organization is loosely based on research interests within the U.S. Geological Survey (USGS). The following general criteria are applied to papers to determine whether they will be included: 1) the paper must be written in English, 2) it must be obtainable by a research library, 3) most of the paper should discuss a particular application of well-log data or have immediate impact on the use of such data. Consequently, papers concerning theoretical or mathematical subjects (i.e., modeling), instrumentation design and development, and laboratory research, are generally excluded. For lack of space, abstracts are excluded (except for extended abstracts) and cross-indexing has been kept to a minimum.

This update has over 750 new and updated references. For the cumulative edition (through September 1, 1990), readers are referred to Prensky (1990).

I wish to acknowledge the assistance of the staff at the Denver branch of the USGS library, especially that of Ms. Suzanne Powers. Their diligence, in tracking down and obtaining the papers listed herein, has made this bibliography possible.

Reference

Prensky, S.E., 1990, Bibliography of Well-Log Applications, Cumulative Edition: U.S. Geological Survey Open-File Report OF 90-637.

Part A: BASIC WELL LOGGING

1. FUNDAMENTALS OF WELL LOGGING AND WELL-LOG INTERPRETATION

I. Books and Review Papers

- Blackbourn, G.A., 1990, Cores and core logging for geologists: Whittles Publishing, Caithness, Scotland, 113 p.
- Borehole Research Group, 1990, Ocean Drilling Program wireline logging manual, 2nd edition: Lamont-Doherty Geological Observatory, Columbia University, 6 v.s + appendix, variously paginated.
- Doveton, J.H., 1986, Log analysis of subsurface geology--Concepts and computer methods: John Wiley & Sons, New York, 273 p.
- French Oil and Gas Industry Association Technical Committee, 1990, Directional drilling and deviation control technology: Gulf Publishing Company, 138 p.
- Hilchie, D.W., 1987, The geologic well log interpreter: Douglas W. Hilchie, Inc., Boulder, CO, variously paginated
- Hilchie, D.W., 1989, Advanced well log interpretation, 2nd edition: Douglas Hilchie, Inc., Boulder, Colorado, variously paginated.
- Hilchie, D.W., 1990, Wireline: a history of the well logging and perforating business in the oil fields: Douglas W. Hilchie, Inc., Boulder, CO, 200 p.
- Kulander, B.R., Dean, S.L., and Ward, B.J., Jr., 1990, Fractured core analysis--intepretation, logging, and use of natural and induced fractures in cores: AAPG Methods in Exploration Series No. 8, 88 p.
- Kuznetsov, V.N., 1989, Petrophysics: Springer-Verlag, Berlin, 375 p.
- Miall, A.D., 1990, The stratigraphic principles of sedimentary basin analysis, 2nd edition: Springer-Verlag, New York, p. 74-80.
- Mills, W.R., Stromswold, D.C., and Allen, L.S., 1991, Advances in nuclear oil well logging: Nuclear Geophysics, v. 5(3), p. 209-227.
- Rider, M.H., 1991, The geological interpretation of well logs, revised edition: Whittles Publishing, Caithness, Scotland, 175 p.
- Schlumberger, 1974, Reprints of articles from the Technical Review, 1958-1973: Schlumberger EPS Production Engineering, Paris, 2 volumes, 944 p.
- Schlumberger, 1982, Reprints of articles from the Technical Review, 1974-1981: Schlumberger ATL-Technique, Paris, Document No. M-072585, 2 volumes, 640 p.
- Schweitzer, J.S., 1991, Nuclear techniques in the oil industry: Nuclear Geophysics, v. 5(1/2), p. 65-90
- Serra, O., 1987, Wireline logs--geological tool [in French]: Bulletin de la Société Géologique de France, series 8, v. 3(7), p. 1,323-1,341.
- Telford, W.M., Geldart, L.P., and Sheriff, R.E., 1990, Geophysical well logging, chapter 11, in Applied geophysics, 2nd edition: Cambridge University Press, New York, p. 645-699.
- Theys, P.P., 1991, Log data acquisition and quality control: Éditions Technip, Paris, 330 p.
- Wagoner, J.C., Mitchum, R.M., Campion, K.M., and Rhamanian, V.D., 1990, Siliciclastic sequence stratigraphy in well logs, cores, and outcrops--concepts for high-resolution correlation of time and facies: AAPG Methods in Exploration Series, No. 7, 55 p.

Whittaker, A., 1991, Mud logging handbook: Prentice-Hall, Englewood Cliffs, NJ, 531 p.

Worthington, P.F., 1991, The direction of petrophysics--a five-year perspective: *The Log Analyst*, v. 32(2), p. 57-62.

II. Electric Logging and General Formation Evaluation (Including Petrophysics and Case Histories) (See also VII. Shaly sand; 18. Mineral evaluation)

Aas, M., Bacri, J-C., Frenois, C., Salin, D., and Woumeni, R., 1990, 3-D acoustic scanner, SPE-20599, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 725-732.

Aguilera, R., 1990, Extensions of Pickett plots for the analysis of shaly formations by well logs: *The Log Analyst*, v. 31, n. 5, September-October, p. 304-309.

Ahmed, U., Crary, S.F., and Coates, G.R., 1989, Permeability estimation; the various sources and their interrelationship, SPE-19604, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 649-662. Later published in 1990 as, The interrelationship between various permeability measurements, paper I, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 21 p. Later published in 1991: *Journal of Petroleum Technology*, v. 43(5), p. 578-587.

Akhter, M.S., and Kreitler, C.W., 1990, Reliability and applicability of DSTs and bottomhole pressure measurements in Texas Gulf Coast Tertiary formations: *Journal of Petroleum Science and Engineering*, v. 3, p. 287-303.

Alixant, J-L., 1990, Improved directional interpretation method, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 197-230..

Al-Khafaji, A.H., Jabur, M.A., and Al-Mashat, A.M., 1988, Gas-brine contact detection by sonic wave velocities: *Journal of Petroleum Research*, v. 7(1), p. 1-12.

Allen, D., Auzeais, F., Dussan, E., Goode, P., Ramakrishnan, T.S., Schwartz, L., Wilkinson, D., Fordham, E., Hammond, P., and Williams, R., 1991, Invasion revisited: *Schlumberger Oilfield Review*, v. 3(3), July, p. 10-23 .

Anderson, B.I., Safinya, K.A., Habeshy, T.M., Davidson, A., and Gilmore, R., 1987, The response of the Electromagnetic Propagation Tool to bed boundaries, SPE-16768, *in* SPE annual technical meeting and exhibition, proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 267-282. Later published in 1990, SPE Formation Evaluation, v. 5(4), p. 458-464.

Auzeais, F.M., Ellis, D.V., Luthi, S.M., Dussan, E.B., V, and Pinoteau, B.J., 1990, Laboratory characterization of anisotropic rocks, SPE-20602, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 751-758.

Baardsen, H., Nilsen, V., Leknes, J., and Hove, A., 1991, Quantifying saturation distribution and capillary pressures using centrifuge and computer tomography, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 102-121.

Becker, K., 1990, A guide to formation testing using ODP drill-string packers: Texas A&M University, Ocean Drilling Program, College Station, Texas, Technical Note No. 14, 143 p.

Belgasem, B.A., Barlai, Z., and Réz, F., 1990, Interpretation of well logs in the oil-bearing reservoir, Nafuora-Augila Field, Libya, paper OO, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 23 p.

Bent, P.W., Radford, S.R., and Eaton, N.G., 1991, Reheat cores to measure gas better: *Petroleum Engineer International*, v. 63(10), p. 46-50.

- Berger, P., and Crumb, R.E., 1990, An integrated approach for the evaluation of shaly-sands reservoirs, offshore northwest Java, OSEA-90190, *in* 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 375-384.
- Bilsland, M., Mobed, R., Cheruvier, E., and White, J., 1990, Predicting hydrocarbon saturations in thin sandstones drilled with oil-based mud, paper C, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 16 p.
- Blackbourn, G.A., 1990, Cores and core logging for geologists: Whittles Publishing, Caithness, Scotland, 113 p.
- Boyd, D., 1989, High resolution Pe logging for improved lithology identification: Canadian Well Logging Society Journal, v. 17, no. 1, p. 41-66.
- Boyeldieu, C., Coblenz, A., and Pelissier-Combescure, J., 1984, Formation evaluation in oil base mud wells, paper BB, *in* 25th annual logging symposium transactions: Society of Professional Well Log Analysts, 18 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 201-218.
- Castanier, L.M., 1989, An introduction to computerized X-ray tomography for petroleum research: U.S. Department of Energy Report No. DOE/BC/14126-7, 24 p.
- Chardaire, C., and Roussel, J.-C., 1990, NMR imaging of fluid saturation distributions in core samples using a high magnetic field, *in* Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 301-315.
- Chaudhary, S., and Vashist, N., 1991, Formation evaluation of finely laminated reservoir, paper VV, *in* 32nd Annual Logging Symposium Transactions: Society of Professional Well Log Analysts, 24 p.
- Chemali, R., Gianzero, S., and Su, S.M., 1988, The dual laterolog in common complex situations, paper N, *in* 29th annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p. Also published in 1988 as paper U, *in* 11th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Norwegian Chapter, 25 p.
- Chilingarian, G.V., and Vorabuth, P., 1981, Basic concepts of drilling and drilling-fluid technology, chapter 2, *in* Chilingarian, G.V., and Vorabuth, P., editors, Drilling and drilling fluid: Elsevier Scientific Publishing Company, Amsterdam, Developments in Petroleum Science, No. 11, p. 17-88.
- Choudhary, R.N., 1990, Effect of conductive rock matrix on formation resistivity and its measurement, SPE-20302: Society of Petroleum Engineers, unsolicited paper, 16 p.
- Clow, W.F., 1988, Petrophysical study of Cardium sand and conglomerate, Ferrier field, Alberta: Canadian Well Logging Society Journal, v. 16, no. 1, p. 121-155.
- Coates, G.R., and Dumanoir, J.L., 1973, A new approach to improved log-derived permeability, paper R, *in* 14th annual logging symposium transactions: Society of Professional Well Log Analysts. Later published in 1974, The Log Analyst, v. 15(1), January-February, p. 17-31. Reprinted in 1986, *in* Openhole well logging: Society of Petroleum Engineers, SPE Reprint Series No. 21, p. 539-551. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 137-151.
- Coates, G.R., and Merrifield, T., 1990, A new approach to incorporating the SP in shaly-sand interpretation, paper P, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 15 p.
- Coleman, M.L., Jones, M.R.O., and Cox, M.A., 1990, Analysis of formation water sampled from core, *in* Buller, A.T., Berg, E., et al., editors, North Sea oil and gas reservoirs II: Graham & Trotman, London, p. 165-171.

- Collier, H., 1989, A guide to selecting the proper borehole resistivity logging suite, in Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 310-324.
- Combariza, G., Lau, M., and Bassiouni, Z., 1990, Formation-water resistivity determination from SP log in case of imperfect shale membrane, paper E, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 11 p.
- Connolly, E.T., and Reed, P.A., 1983, Full spectrum formation evaluation: Canadian Well Logging Society Journal, v. 12(1), p. 23-69. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 153-199.
- Cook, P.L., Schneeflock, R.D., Bush, J.D., and Marble, J.C., 1991, Logging anomalies key to 100-bcf, shallow gas play: World Oil, v. 212(9), p. 47-50. Also published in 1991 as, Trimble field, Mississippi--100 BCF of bypassed, low resistivity Cretaceous Eutaw pay at 7,000 ft: Oil and Gas Journal, v. 88(43), October 22, 96-102.
- Cornwall, C.K., 1990, Core preservation--an alternative approach, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 79-94.
- Cosmo, C., Spalburg, M.R., and Looyestijn, W.J., 1991, Fast deconvolution of laterologs by direct inverse filtering, paper R, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 12 p.
- Craig, D.E., 1991, The derivation of permeability-porosity transforms for the H.O. Mahoney lease, Wasson field, Yoakum County, Texas, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 289-314.
- Cuddy, S., and Webber, G., 1989, Computer techniques to improve the vertical resolution of the induction log, paper 7, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 20 p.
- Cuiec, L.E., 1991, Evaluation of reservoir wettability and its effect on oil recovery, chapter 9, in Morrow, N.R., editor, Interfacial phenomena in petroleum recovery: Marcel Dekker, Inc., New York, p. 319-375.
- Cunningham, A.B., and Jay, K.L., 1991, Field experience using the nuclear magnetic logging tool for quantifying microporosity and irreducible water saturation, paper EE, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- Dankházi, G., Zilahi-Sebess, L., Szongoth, G., Bán, I., Kiss, B., and Tóth, J., 1990, Induced polarization (IP) - a new type of measurement in boreholes, paper J, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p.
- Darling, H., Patten, D., Young, R.A., and Schwarze, L., 1991, Single-well data integration: Schlumberger Oilfield Review, v. 3(3), July, p. 29-34.
- Dawe, B.A., and Murdock, D.M., 1990, Laminated sands; an assessment of log interpretation accuracy by an oil-base mud coring program, SPE-20542, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 131-142.
- Denisov, S.B., 1990, Determination of dielectric permittivity of rocks, in Soviet advances in applied geophysics: A.A. Balkema, Rotterdam, The Netherlands, p. 116-121. [originally appeared in Russian in 1988, Prikladnaya Geofizika, n. 119, p. 129-134.]
- Desbrandes, R., 1991, Wireline formation testing--a new extended drawdown technique: Petroleum Engineering International, v. 63(5), May, p. 40-44.

- Desbrandes, R. and Bassiouni, Z., 1989, In-situ wettability determination in gas reservoirs, SPE-19058, *in* SPE gas technology symposium proceedings: Society of Petroleum Engineers, p. 53-62. Later published in 1990, SPE Formation Evaluation, v. 5(4), p. 431-436.
- Desbrandes, R., and Gualdron, J., 1987, In situ rock wettability determination with formation pressure, paper Z, *in* 28th annual logging symposium transactions: Society of Professional Well Log Analysts, 20 p. Later published in 1988, The Log Analyst, v. 29(4), July-August, p. 244-252.
- Dixon, J.R., and Marek, B.F., 1990, The effect of bimodal pore-size distribution on electrical properties of some Middle Eastern limestones, SPE-20601, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 743-750.
- Dixon, M., 1991, Benefits of high resolution computed tomography in core analysis, SCA-9127, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 8 p.
- Donaldson, A., and Clydesdale, G.M., 1990, Accurate reservoir evaluation quality core samples—a good starting point, *in* Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 35-53.
- Dull, D.W., 1991, Calibrating old, new logs to cores needed for planning CO₂ flood: Oil and Gas Journal, v. 89(28), July 15, p. 58-64.
- Dunlop, K.N.B., King, G.A., and Breitenbach, E.A., 1988, Monitoring of oil/water fronts by direct measurement, SPE-18271, *in* SPE annual technical conference and exhibition proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 91-99. Later published in 1991: Journal of Petroleum Technology, v. 43(5), p. 596-602.
- Eaton, N., 1990, Coring the horizontal hole, *in* Weiner, P.D., and Kastor, R.L., editors, Drilling technology symposium 1990, proceedings: The American Society of Mechanical Engineers, New York, 13th Annual Energy-sources Technology Conference, v. PD-27, p. 65-69.
- Edmundson, H.N., 1988, Archie's law; electrical conduction in clean, water-bearing rock: The Technical Review, v. 36(3), p. 4-13. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 34-43..
- Edmundson, H.N., 1988, Archie II—Electrical conduction in hydrocarbon-bearing rocks: The Technical Review, v. 36(4), October, p. 12-21. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 44-53.
- Ehrlich, R., and Etris, E.L., 1990, Pore types and core physics, paper SCA-9001, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 31 p.
- El Ibiary, O., Shimi, A., el Zayat, M., Ramadan, H., Hostettler, J.E., and Beardmore, D.H., 1991, Modified mud reduces borehole enlargement in Egypt: Oil and Gas Journal, v. 89(7), February 18, p. 44-49.
- El-Sayed, A.A., and El-Dairy, M.D., 1989, Evaluation of some petrophysical parameters for the Lower Cretaceous reservoir rocks, Western Desert, Egypt: Journal of the Geological Society of India, v. 33(5), p. 457-468.
- Elliott, H.W., 1983, Some "pitfalls" in log analysis: The Log Analyst, v. 24(1), p. 10-24. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 122-136.
- Enderlin, M.B., Hansen, D.K.T., and Hoyt, B.R., 1991, Rock volume—Considerations for relating well log and core data, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 278-288.

- Ethier, V.G., and King, H.R., 1991, Reservoir quality evaluation from visual attributes on rock surfaces—methods of estimation and classification from drill cuttings or cores: *Bulletin of Canadian Petroleum Geology*, v. 39(3), September, p. 233-251.
- Etnyre, L.M., 1990, Estimation of petrophysical parameters using a robust-Marquardt procedure, paper Q, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 20 p.
- Fertl, W.H., 1978, Knowing basic reservoir parameters first step in log analysis, practical log analysis, part 2: *Oil and Gas Journal*, V. 76(21), May 22, p. 98-118. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 72-79.
- Fertl, W.H., 1986, Log-derived evaluation of shaly clastic reservoirs, SPE-14061, *in* 1986 SPE international meeting on petroleum engineering [Beijing, March 17-20], proceedings: Society of Petroleum Engineers. Later published in 1987, *Journal of Petroleum Technology*, v. 39(2), p. 175-194. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 347-366.
- Fertl, W.H., Sinha, A.K., and McDougall, J.G., 1988, Advances in complex reservoir evaluation based on geophysical logs: *Canadian Well Logging Society Journal*, v. 16, no. 1, p. 25-45.
- Flaum, C., and Theys, P.P., 1991, Geometrical specifications of logging tools—the need for new standards, paper YY, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- Freedman, R., and Grove, G.P., 1988, Interpretation of EPT-G logs in the presence of mudcakes, SPE-18116, *in* 1988 SPE annual technical conference proceedings, v. omega, formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 87-102. Later published in 1990, as Interpretation of ADEPT logs in the presence of mudcakes: *SPE Formation Evaluation*, v. 5(4), p. 449-457.
- French, A., 1990, Horizontal coring using air as the circulating fluid—some prototype studies conducted in G tunnel at the Nevada Test Site from the Yucca Mountain project, *in* Weiner, P.D., and Kastor, R.L., editors, *Drilling technology symposium 1990*, proceedings: The American Society of Mechanical Engineers, New York, 13th Annual Energy-sources Technology Conference, v. PD-27, p. 59-64.
- Fylling, A., 1991, Estimating conductivity and saturations in the sands of thinly laminated, dipping sand/shale sequences, paper O, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Gardner, J.S., and Dumanoir, J.L., 1980, Litho-Density Log interpretation, paper N, *in* 21st annual logging symposium transactions: Society of Professional Well Log Analysts, 12 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16*, p. 397-419.
- Givens, W.W., 1991, A dual-porosity, surface, and matrix electrical conduction model for low-contrast resistivity sandstone formations, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., *Reservoir characterization II*: Academic Press, Inc., San Diego, California, p. 27-51.
- Glanville, C.R., 1990, Evaluation of a lateral-log resistivity-ratio method for application to geological and reservoir modeling of Daqing West Saertu oil sands, People's Republic of China, paper L, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 51 P.
- Goode, P.A., and Thambynayagam, R.K.M., 1990, Analytic models for a multiple probe formation tester, SPE-20737, *in* SPE annual technical conference and exhibition, proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 211-224.

- Gorbachev, Y.L., 1990, Tying referencing the depth of core drilling intervals to logging data, in Soviet advances in applied geophysics: A.A. Balkema, Rotterdam, The Netherlands, p. 116-121. [originally appeared in Russian in 1988, *Prikladnaya Geofizika*, n. 119, p. 132-143.]
- Greaves, R.J., Beydoun, W.B., and Spies, B.R., 1991, New dimensions in geophysics for reservoir monitoring, SPE-20170: SPE Formation Evaluation, v. 6(2), p. 141-150.
- Griffin, T.J., Jr., 1991, Extended range particle size distribution using laser diffraction technology—A new perspective, SCA-9126, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 12 p.
- Grove, G.P., and Minerbo, G.N., 1991, An adaptive borehole correction scheme for array induction tools, paper P, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Guest, K., 1990, The use of core-derived quantitative mineralogical data to improve formation evaluation, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 187-209.
- Gundesø, R., and Grønvd, T., 1990, The impact of thin beds in reservoir characterization from a geological viewpoint, paper M, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 18 p.
- Gunter, J.M., and Moore, C.V., 1986, Improved use of wireline testers for reservoir evaluation, SPE-14063, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings: Society of Petroleum Engineers, p. 401-413. Later published in 1987, *Journal of Petroleum Technology*, v. 39(6), SPE-16481, p. 634-644. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 733-742..
- Guo, G., Friedman, G.M., and Sanders, J.E., 1991, Petrophysical characteristics of selected formations penetrated by the Finnegan boring, southern Washington, County, New York: *Northeastern Geology*, v. 13(1), p. 32-38.
- Gwinner, D.M., Laude, L.S., Olmos, Quirein, J.A., and Reimer, L.J., 1991, Improved reservoir characterization by integration of petrophysics, geology, and core analysis—an example from the Hugoton field, Kansas, paper TT, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- Habesch, S.M., 1991, Pore geometry evaluation by petrographic image analysis, in Gaal, G., and Merriam, D.F., editors, Computer applications in resource estimation: Pergamon Press, Oxford, England, p. 301-320.
- Hay, W., Knott, I., and Shiells, G., 1990, Development of coring and electronic data logging system to enhance data quality and quantity facilitating improved oriented core analysis, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 159-170.
- Hazlett, W.G., 1990, Correlation of reservoir rock properties in porous media: Texas A&M University, College Station, unpublished Ph.D. dissertation, 92 p.
- Head, E., Howard, A., and Broussard, T., 1990, An introduction to new invasion interpretation parameters, paper H, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 20 p.
- Henry, W.E., 1990, Accuracy and reliability of electronic instrument core-orientation surveys, SCA-9028, in Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 28 p.

- Heslop, A., 1972, Gamma-ray log response of shaly sandstone: Canadian Well Logging Society Journal, v. 5(1), p. 29-37. Later published in 1974, paper M, in 15th annual logging symposium transactions: Society of Professional Well Log Analysts. Later published in 1974, The Log Analyst, v. 15(5), p. 16-21. Reprinted in 1982, in Shaly sand reprint volume: Society of Professional Well Log Analysts, p. II59-II69. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 324-329.
- Hicks, P.J., Jr., Deans, H.A., and Narayanan, K., 1990, Experimental measurement of the distribution of residual oil saturations in heterogeneous carbonate cores using X-ray computerized tomography, paper 90-68, in Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 12 p. Also published in 1990 as paper SPE-21574: Society of Petroleum Engineers, unsolicited.
- Hietala, R.W., 1991, The process and value of petrophysical integration, in The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 72-102.
- Hietala, R.W., and Connolly, E.T., 1984, Integrated rock-log calibration in the Elsworth Field, Alberta Canada--Part II, Well log analysis methods and techniques, in J.A. Masters, editors, Elsworth--case study of a Deep Basin gas field: AAPG Memoir No. 38, p. 215-242. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 261-288.
- Hilchie, D.W., 1987, The geologic well log interpreter: Douglas W. Hilchie, Inc., Boulder, CO, variously paginated
- Hilchie, D.W., 1989, Advanced well log interpretation, 2nd edition: Douglas Hilchie, Inc., Boulder, Colorado, variously paginated.
- Hirsche, W.K., Wang, Z., and Sedgwick, G., Seismic monitoring of miscible/immiscible flood, part I--Petrophysical studies, RP2.2 [abs.], in Expanded abstracts with biographies, 1990 technical program, : Society of Exploration Geophysicists, v. 1, p. 816-819.
- Hitchner, J.R., MacCallum, G.T., and MacCallum, W.E., 1987, Statistically based well log analysis applied to reservoir studies: Canadian Heavy Oil Association, presented at the 6th Quarterly Meeting. Later published in 1988, Canadian Well Logging Society Journal, v. 16, no. 1, p. 51-80.
- Houyi, L., 1990, Application of resistivity time-lapse logging in Renqiu buried-hill oil pool, paper R, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 20 p.
- Howard, J.J., Kenyon, W.E., and Straley, C., 1990, Proton-magnetic-resonance and pore-size variations in reservoir sandstones, SPE-20600, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 733-742.
- Hsieh, F.S., and Vega, C.I., 1990, New porosity log equations for borehole containing variable shale volume, SPE-19396: Society of Petroleum Engineers, unsolicited paper, 23 p.
- Huang, Z., and Gradstein, F.M., 1990, Depth-porosity relationship from deep sea sediments: Scientific Drilling 1(4), p.157-162.
- Hunka, J.F., Barber, T.D., Rosthal, R.A., Minerbo, G.N., Head, E.A., Howard, A.Q., Jr., Hazen, G.A., and Chandler, R.N., 1990, A new resistivity measurement system for deep formation imaging and high-resolution formation evaluation, SPE-20559, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 295-307.
- Hurst, A., and Rosvoll, K.J., 1991, Permeability variations in sandstones and their relationship to sedimentary structures, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 166-196.

- Jackson, P.D., Lovell, M.A., Pitcher, C., Green, C.A., Evans, C.J., Flint, R., and Forster, A., 1990, Electrical resistivity imaging of core samples, *in* Worthington, P.F., editor, *Advances in core evaluation, accuracy, and precision in reserves estimation* [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 365-378. Also published in 1990, as High-resolution electrical resistivity imaging of core samples, paper G, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 9 p.
- Jacobsen, S., moderator, 1991, Log interpretation strategies in gas wells: *Schlumberger Oilfield Review*, v. 3(2), April, p. 22-34.
- Jacobsen, T., 1991, Permeability patterns in some fluviial sandstones—An outcrop study from Yorkshire, northeast England, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., *Reservoir characterization II*: Academic Press, Inc., San Diego, California, p. 315-338.
- Jain, P.K., 1990, Anomalous low resistivity Tipam sands of Assam India and their observed petrophysical aspects, OSEA-90192, *in* 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 1-18.
- Jasti, J., Jesion, G., and Feldkamp, L., 1990, Microscopic imaging of porous media using X-ray computer tomography, SPE-20495, *in* SPE annual technical conference and exhibition, proceedings, v. omega, *Formation evaluation and reservoir geology*: Society of Petroleum Engineers, p. 269-276.
- Javalagi, M.I., Morriss, S.L., Chenevert, M.E., 1991, Time-lapse resistivity and water-content changes in shale, paper AAA, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p.
- Jinlun, Z., 1990, The application of gas log interpretation in finding fissured mudstone gas pool, paper Y, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 23 p.
- Jirik, L.A., Howard, W.E., and Sadler, D.L., 1991, Identification of bypassed gas reserves through integrated geological and petrophysical techniques—a case study in Seeligson field, Jim Wells County, south Texas, SPE-21483, *in* SPE gas technology symposium proceedings: Society of Petroleum Engineers, p. 7-16.
- Jorgensen, D.G., 1990, Estimating water quality from geophysical logs, *in* Paillet, F.L., and Saunders, W.R., editors, *Geophysical applications for geotechnical investigations*: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 47-64.
- Kate, J.M., and Aggarwal, P.K., 1990, Temperature effects on electrical resistivity of intact sandstones, *in* Price, D.G., editor, 6th international congress International Association of Engineering Geology, proceedings: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 987-994.
- Katsube, T.J., Best, M.E., Murphy, T.B., and Mudford, B.S., 1990, Pore-structure characteristics of low-permeability shales from deep formations, paper SCA-9010, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 20 p.
- Keith, B.D., and Pittman, E.D., 1983, Bimodal porosity in oolitic reservoir—Effect on productivity and log response, Rodessa Limestone (Lower Cretaceous), East Texas Basin: *AAPG Bulletin*, v. 67(9), p. 1391-1399. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II—log interpretation*: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 303-311.
- Kenter, J.A.M., 1989, Applications of computerized tomography in sedimentology: *Marine Geotechnology*, v. 8, p. 201-211.
- Keys, W.S., 1988, Borehole geophysics applied to ground-water hydrology: U.S. Geological Survey Open-File Report 87-539, 305 p. Later published in 1989: National Water Well Association, Dublin, Ohio, 313 p. Later published in 1990, Borehole geophysics applied to ground-water investigations: U.S. Geological Survey, Techniques of Water-Resources Investigations, book 2, chapter E2, 150 p.

- King, E.E., and Fertl, W.H., 1978, "Eyeballing" the old electric log, practical log analysis, part 11: Oil and Gas Journal, v. 76(45), November 6, p. 66-72. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 64-70.
- Kiss, B., Csató, I., and Balla, G., 1990, Compaction-trend analysis of the sediments in the Pannonian Basin, paper AAA, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 14 p.
- Klein, J.D., 1991, Induction log anisotropy corrections, paper T, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 21 p.
- Kulander, B.R., Dean, S.L., and Ward, B.J., Jr., 1990, Fractured core analysis--intepretation, logging, and use of natural and induced fractures in cores: AAPG Methods in Exploration Series No. 8, 88 p.
- Kuznetsov, V.N., 1989, Petrophysics: Springer-Verlag, Berlin, 375 p.
- Laga, P.G., and Vandormael, C., 1990, The use of geophysical well logs in stratigraphy: Tertiary Research, v. 11(2-4), p. 195-203.
- Lanza, R.C., McFarland, E.W., and Poulos, G.W., 1991, Computerized neutron tomography for core analysis, SCA-9128, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 12 p.
- LaTorraca, G.A., and Hall, C.G., 1991, Observations of rock fabric controls on the electrical properties of sandstones, SCA-9116, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Lawrence, T.D., and Lee, H.S., 1990, Dielectric-log applications in complex lithologies and variable-salinity fluids, paper N, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 15 p.
- Lawrence, T.D., and Mezzatesta, A.G., 1989, Thin-bed analysis using high-resolution measurements, paper 6, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 13 p.
- Lawrence, T.D., Sinha, A.K., and Fertl, W.H., 1990, U.S. Gulf Coast field experience with thin-bed well log analysis: Transactions Gulf Coast Association of Geological Societies, v. 40, p. 475-483.
- Leetaru, H.E., 1990, Application of old electric logs in the analysis of Aux Vases Sandstone (Mississippian) reservoirs in Illinois: Illinois State Geological Survey, Illinois Petroleum 134, 21 p. Later published in 1991 in abbreviated form as, Analysis of pre-1960 logs can pinpoint pay in Illinois' Aux Vases, other zones, regions: Oil and Gas Journal, v. 89(8), February 25, p. 50-52.
- Leetaru, H.E., 1991, Reservoir heterogeneity and improved oil recovery of the Aux Vases (Mississippian) Formation at King field, Jefferson County, Illinois: Illinois State Geological Survey Report No. IP-135, 49 p.
- Leitham, R., 1989, Quantifying gas and bitumen saturation of the Elkton and Shunda carbonates in the Seal area, north central Alberta: Canadian Well Logging Society Journal, v. 17, no. 1, p. 27-39.
- Lekia, S.D.L., and Evans, R.D., 1990, A water-gas relative permeability relationship for tight gas sand reservoirs: Journal of Energy Resources Technology, v. 112, p. 239-245.
- Lewis, J., Williams, A., Enwere, P.M., Archer, J.S., and Taylor, D.G., 1990, Applications of magnetic resonance imaging in special core analysis studies, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 317-345.

- Li, Y., and Wardlaw, N.C., 1991, Quantitative determination of pore structure from mercury capillary pressure curves, chapter 4, *in* Morrow, N.R., editor, *Interfacial phenomena in petroleum recovery*: Marcel Dekker, Inc., New York, 101-156.
- Lippmann, E. Buckner, Ch., Huenges, E., Rauen, A., Wienand, J., Wolter, K., Soffel, H.C., 1989, Rock physical properties; first results of the KTB-field-laboratory: *Scientific Drilling*, v. 1(3), p. 143-149.
- Lishman, J., 1988, A method of treating clay correction in mixed mineral calculations: *Canadian Well Logging Society Journal*, v. 16, no. 1, p. 83-109.
- Long, R.C., and Mitchell, B.J., 1990, A new approach to directional survey interpretation and course correction by the sectional method, *in* Weiner, P.D., and Kastor, R.L., editors, *Drilling technology symposium 1990*, proceedings: The American Society of Mechanical Engineers, New York, 13th Annual Energy-sources Technology Conference, v. PD-27, p. 71-83.
- Longeron, D.G., 1990, Laboratory measurements of capillary and electrical properties of rocks samples at reservoir conditions; effect of some parameters, SCA-9023, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 28 p.
- Longeron, D.G., and Yahya, F.A., 1991, Laboratory measurements of cementation factor and saturation exponent under reservoir conditions on Asab reservoir rock samples, SCA-9117, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Loren, J.D., Kulha, J.T., Renbarger, K.S., and Sneider, R.M., 1991, Reservoir properties inferred from seismic response in areas with minimal log control, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 271-280.
- Lovell, M.A., and Jackson, P.D., 1991, Electrical flow in rocks; the application of high resolution electrical resistivity core measurements, paper H, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 13 p.
- Luffel, D.L., Herrington, K.L., and Walls, J.D., 1990, Effect of extraction and drying on flow, capillary, and electrical properties of Travis Peak cores containing fibrous illites, SPE-20725, *in* SPE annual technical conference and exhibition, proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 131-138.
- Luffel, D.L., Howard, W.E., and Hunt, E.R., 1989, Relationships of permeability, porosity, and overburden stress derived from extensive core analysis data base in the Travis Peak Formation, SPE-19008, *in* SPE joint Rocky Mountain regional/low permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 729-740. Later published in 1991 as, Travis Peak core permeability and porosity relationships at reservoir stress: SPE Formation Evaluation, v. 6(3), p. 310-318.
- Lysne, P.C., Worthington, P.F., and Pyle, T.E., 1990, Scientific logging in high-temperature boreholes: *Scientific Drilling*, v. 1(6), p. 296-299.
- MacAllister, D.J., Miller, K.C., Graham, S.K., and Yang, C-T., 1990, Application of X-ray CT scanning to the determination of gas-water relative permeabilities, SPE-20494, *in* SPE annual technical conference and exhibition, proceedings, v. gamma, Enhanced oil recovery/general petroleum engineering: Society of Petroleum Engineers, p. 255-267.
- Mahmood, S.M., Maerefat, N.L., and Chang, M.M., 1988, Laboratory measurements of electrical resistivity at reservoir conditions: U.S. Department of Energy Report NIPER-298, 40 p. Also published in 1988 as SPE-18179, *in* SPE annual technical meeting and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 705-719. Later published in 1991: SPE Formation Evaluation, v. 6(3), p. 291-300.

- Major, R.P., and Holtz, M.H., 1989, Depositionally and diagenetically controlled reservoir heterogeneity at Jordan field, SPE-19874, *in* SPE annual technical conference and exhibition, proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 633-640. Later published in 1990, *Journal of Petroleum Technology*, v. 42(10), p. 1,304-1,309.
- Maloney, D.R., Honarpour, M.M., and Brinkmeyer, A.D., 1990, The effects of rock characteristics on relative permeability: U.S. Department of Energy Report No. NIPER-441, 29 p.
- Mandava, S.S., Watson, A.T., and Edwards, C.M., 1990, NMR imaging of saturation during immiscible displacements: *AIChE [American Institute of Chemical Engineering] Journal*, v. 36(11), p. 1680-1686.
- Mansure, A.J., 1991, Parameterizing and block-averaging electrical characteristics of a reservoir—an essential part of electrical/electromagnetic evaluation of production process, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 171-180.
- Mansure, A.J., and Meldau, R.F., 1989, Steam-zone electrical characteristics for geodiagnostic evaluation of steamflood performance, SPE-18797, *in* SPE California regional meeting, proceedings: Society of Petroleum Engineers, p. 499-508. Later published in 1990, *SPE Formation Evaluation*, v. 5(3), p. 241-247.
- Mansure, A.J., Meldau, R.F., and Weyland, H.V., 1990, Field examples of electrical resistivity changes during steamflooding, SPE-20539, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 109-119.
- Marett, G., and Kimminau, S., 1989, Logs, charts, and computers—the history of log interpretation modelling, *in* Log Analysis Software Evaluation and Review (LASER) Symposium transactions: Society of Professional Well Log Analysts, London Chapter, 31 p. Later published in 1990, *The Log Analyst*, v. 31(6), November-December, p. 335-354.
- Matyas, V., 1990, Kuskal technique of formation identification from well logs, paper T, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 13 p.
- May, A., 1991, Electromagnetic propagation log interpretation on the computer: *Geobyte*, v. 6(3), p. 33-44.
- McGregor, K.W., Park, E.I., Sincok, K.J., and Piekenbrock, E.J., 1991, Effective unconsolidated core preservation in the Arctic environment—An aid to accurate reservoir evaluation, SPE-22128, *in* SPE international Arctic technology conference [May 29-31, Anchorage, Alaska] proceedings: Society of Petroleum Engineers, p. 535-544.
- McNamara, L.B., Wardlaw, N.C., and McKellar, M., 1991, Assessment of porosity from outcrops of vuggy carbonate and application to cores: *Bulletin of Canadian Petroleum Geology*, v. 39(3), September, p. 260-269.
- McSwiggen, P.L., 1989, CoReLog—a new device for logging resistivity of drill core and its use in research on carbonaceous metasedimentary rocks, *in* Graphite in early Proterozoic rocks of east-central Minnesota: Minnesota Geological Survey Report No. 28, p. 59-68.
- Miller, M.N., Paltiel, Z., Gillen, M.E., Granot, J., and Bououton, J.C., 1990, Spin-echo magnetic-resonance logging—porosity and free-fluid index, SPE-20561, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 321-334.
- Milne, N.A., and Barr, D.C., 1990, Subsurface fracture analysis, Palm Valley gas field: APEA [Australian Petroleum Exporation Association] *Journal*, v. 30, part 1, p. 321-341.
- Missman, R.A., and Jameson, J., 1991, An evolving description of a fractured carbonate reservoir—The Lisburne field, Prudhoe Bay, Alaska, SPE-22161, *in* SPE international Arctic technology conference [May 29-31, Anchorage, Alaska] proceedings: Society of Petroleum Engineers, p. 699-718.
- Moore, S.D., 1991, Video logging—Your downhole eye: *Petroleum Engineer International*, v. 63(10), p. 22-23.

- Morrow, N.R., 1990, Wettability and its effect on oil recovery, SPE-21621: *Journal of Petroleum Technology*, v.42(12), p. 1,476-1,484.
- Morrow, N.R., and Melrose, J.C., 1991, Application of capillary pressure measurements to the determination of connate water saturation, chapter 7, *in* Morrow, N.R., editor, *Interfacial phenomena in petroleum recovery*: Marcel Dekker, Inc., New York, p. 257-287.
- Morrow, N.R., Cather, M.E., Buckley, J.S., and Dandge, V., 1991, Effects of drying on absolute and relative permeabilities of low-permeability gas sands, SPE-21880, *in* SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 727-739.
- Moss, R.M., Pepin, G.P., and Davis, L.A., 1990, Direct measurement of the constituent porosities in a dual-porosity matrix, paper SCA-9003, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 25 p.
- Moss, R.M., and Russo, J.W., 1991, Quantitative determination of secondary porosity using X-ray computed tomography and wireline logs, paper J, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Myers, M.T., 1991, A saturation interpretation model for the dielectric constant of shaly sands, SCA-9118, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Nelson, P.H., 1990, Borehole magnetometry—detection of a steel liner from a nearby observation borehole: U.S. Geological Survey Open-File Report No. 90-492, 24 p.
- Nelson, R.J., and Mitchell, W.K., 1990, Improved vertical resolution of well logs by resolution matching, paper JJ, *in* 31st annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p. Later published in 1991: *The Log Analyst*, v. 32(4), p. 339-349.
- Nicolaysen, R., and Svendsen, T., 1991, Estimating the permeability for the Troll field using statistical methods querying a fieldwide database, paper QQ, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 13 p.
- Nieto, J.A., Yale, D.P., and Evans, R.J., 1990, Improved methods for correcting core porosity to reservoir conditions, paper F, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 20 p.
- Nieto, J.A., Yale, D.P., and Evans, R.J., 1990, Core compaction correction—a different approach, *in* Worthington, P.F., editor, *Advances in core evaluation, accuracy, and precision in reserves estimation* [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 139-156.
- Nobes, D.C., Mienert, J., and Dirksen, G.J., 1991, Lithologic control of physical-property interrelationships, chapter 35, *in* Ciesielski, P.F., Kristoffersen, Y., et al., editors, *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 657-669.
- Nobes, D.C., Mwenifumbo, C.J., Mienert, J., and Blangy, J.P., 1991, The problem of porosity rebound in deep-sea sediment cores—a comparison of laboratory and in-situ physical-property measurements, site 704, Meteor Rise, chapter 38, *in* Ciesielski, P.F., Kristoffersen, Y., et al., editors, *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 711-716.
- Nolte, C., 1990, Anomalous mechanical well log resistivities in the middle Morrow Sandstones of southeast Colorado, *in* Sonnenberg, S.A., Shannon, L.T., Rader, K., von Drehe, W.F., and Martin, G.W., editors, *Morrow Sandstones of southeast Colorado and adjacent areas*: Rocky Mountain Association of Geologists, Denver, p. 227-231.

- Nover, G., Buntebarth, G., Kern, H., Pohl, I., Pusch, G., Schopper, J.R., Schult, A., Will, G., 1989, Petrophysical investigations on core samples of the KTB: Scientific Drilling, V. 1(3), p. 135-142.
- O'Sullivan, T.P., Kiloh, K.D., Starzer, M.R., and Trevena, A.S., 1991, Conglomerate identification and mapping leads to development success in a mature Alaskan field, SPE-22163, in SPE international Arctic technology conference [May 29-31, Anchorage, Alaska] proceedings: Society of Petroleum Engineers, p. 719-726.
- Oltz, D.F., Leetaru, H.E., Seyler, B., and Whitaker, S.T., 1991, An integrated approach to reservoir characterization in the Illinois Basin, in The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 38-60.
- Osment, P.A., Packer, K.J., Taylor, M.J., Attard, J.J., Carpenter, T.A., Hall, L.D., Nerrod, N.J., and Doran, S.J., 1991, NMR imaging of fluids in porous solids: Philosophical Transactions of the Royal Society of London, Series A, v. 333(1632), p. 441-452.
- Owens, J., and Cockcroft, P., 1990, Sensitivity analysis of errors in reserve evaluations due to core and log measurement inaccuracies, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 381-394.
- Pages, G., Francisque, J.H., Flaum, C., Yver, J.P., 1990, The impact of utilizing the new CNL transforms and environmental corrections in evaluation of low-porosity dolomite formations, paper EE, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 16 p.
- Pallatt, N., and Thornley, D., 1990, The role of bound water and capillary water in the evaluation of porosity in reservoir rocks, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 223-237.
- Pearce, M.S., 1989, Long-term properties of clay, water-based drilling fluids, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 115-132.
- Peters, E.J., and Hardham, W.D., 1990, Visualization of fluid displacements in porous media using computed tomography imaging: Journal of Petroleum Science and Engineering, v. 4, p. 155-168.
- Pezard, P.A., Howard, J.J., and Goldberg, D., 1991, Electrical conduction in oceanic gabbros, hole 735B, Southwest Indian Ridge, chapter 18, in Von Herzen, R.P., Robinson, P.T., et al., editors, Proceedings of the Ocean Drilling Program, scientific results, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 323-331.
- Phelps, G.D., 1990, Computation of mud filtrate invasion profiles, paper 90-76, in Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 16 p.
- Phillips, C., DiFoggio, R., and Burleigh, 1991, Extracting information from digital images of core, SCA-9125, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Pugh, V.J., Thomas, D.C., and Gupta, S.P., 1990, Correlations of liquid and air permeabilities for use in reservoir engineering studies, SCA-9012, in Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 15 p.
- Radhakrishna, I., and Rao, T.G., 1990, Evaluation of hydrogeochemical parameters with spontaneous potential logs: Journal of Hydrology, v. 114, p. 245-257.

- Rajan, R., and Delaney, P., 1991, Reconciliation of log and capillary pressure based water saturation in the Fateh Thamama reservoir, Dubai, paper UU, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Ramey, H.J., Jr., 1990, Advances in practical well-test analysis, SPE-20592, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 665-676.
- Raymer, L.L., Hunt, E.R., and Gardner, J.S., 1980, An improved sonic transit time-to-porosity transform, paper P, in 21st annual logging symposium transactions: Society of Professional Well Log Analysts, 12 p. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 367-379.
- Repsold, H., and Mundry, E., 1990, Resistivity master curves for multiple-point resistivity measurements in boreholes: Niedersachsisches Landesamt fur Bodenforschung Geowissenschaftliche Gemeinschaftsaufgaben, 311 p.
- ResTech Houston, 1988, Formation evaluation from improved sampling and analysis of mud gas and cuttings, workshop proceedings: Gas Research Institute Report No. GRI-88/201, variously paginated
- Rixon, M.D., Kasperski, B.W., and Morriss, C.E., 1989, Vertical resolution enhancement of the Phasor Induction; applications in western Canada, paper 89-40-77, in Building on 40 years of achievement [annual meeting preprints, v. II]: Petroleum Society of CIM, Calgary, 16 p. Later published in 1990, Journal of Canadian Petroleum Technology, v. 29(5), p. 92-104.
- Ruhovets, N., 1989, A log analysis technique for evaluating laminated reservoirs in the Gulf Coast area, paper C, in 12th formation evaluation symposium transactions: Canadian Well Logging Society, 23 p. Later published in 1990, The Log Analyst, v. 31(5), September-October, p. 294-303.
- Saxena, V., and Sibbit, A.M., 1990, Deep saturation in low-salinity reservoirs from dual-laterolog quadrature signals, SPE-20560, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 309-320.
- Schmidt, P.W., and Anderson, J.C., 1991, Orientation of drill core using paleomagnetism in coal exploration, in 25th Newcastle symposium on advances in the study of the Sydney basin: University of Newcastle, Department of Geology, Newcastle, NSW, Australia, p. 118-121.
- Schmitz, D., Hirschmann, G., Kessels, W., Koh, J., Rohr, C., and Dietrich, H.-G., 1989, Core orientation in the KTB pilot well: Scientific Drilling, v. 1(3), p. 150-155.
- Sercombe, W.J., and Anderson, B.R., 1990, Net-pay application from nuclear magnetic resonance, Nugget Sandstone, Wyoming thrust belt, SCA-9026, in Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 22 p.
- Shen, L.C., 1985, Problems in dielectric-constant logging and possible routes to their solution: The Log Analyst, v. 26(6), November-December, p. 14-25. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 579-589.
- Silva, C., and Spooner, D., 1991, High resolution induction logging--a comparison with conventional induction as used in thin sands in the Texas Gulf Coast region, paper WW, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 22 p.
- Sincock, K.J., Lombos, L., and MacGregor, K.W., 1990, Major advance in sampling and preserving unconsolidated reservoir core, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 19-33.

- Skopec, R.A., 1991, In-situ stress evaluation in core analysis, SCA-9103, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Skopec, R.A., Mann, M.M., Jeffers, D., and Grier, S.P., 1990, Horizontal-core acquisition and orientation for formation evaluation, SCA-9017, in Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 32 p. Also published in 1990 as SPE-20418, in SPE annual technical conference and exhibition, proceedings, v. delta, drilling: Society of Petroleum Engineers, p. 153-166.
- Sneider, R.M., and King, H.R., 1984, Integrated rock-log calibration in the Elsworth Field, Alberta Canada--Part I, reservoir rock detection and characterization, in J.A. Masters, editors, Elsworth--case study of a Deep Basin gas field, : AAPG Memoir No. 38, p. 205-214. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 251-260.
- Soeder, D.J., 1990, Assessing tight gas reservoir quality using petrography and core analysis, in 1989 international gas research conference, proceedings: Gas Research Institute, Chicago, p. 1537-1545.
- Søndena, E., Bratteli, F., Normann, H.P., Kolltveit, K., 1991, The effect of reservoir conditions and wettability on the capillary pressure curve, SCA-9108, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Spalburg, M.R., 1989, An algorithm for simultaneous deconvolution, squaring, and depth-matching of logging data, paper 21, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 14 p.
- Sprunt, E.S., 1987, Arun core analysis; special procedures for vuggy carbonates, paper IPA-87-21/04, in 16th annual convention proceedings: Indonesian Petroleum Association, Jakarta, v. 2, p. 11-23. Later published in 1989: The Log Analyst, v. 30(5), September-October, p. 353-362.
- Sprunt, E.S., Desai, K.P., Coles, M.E., Davis, R.M., and Muegge, E.L., 1991, CT-scan-monitored electrical resistivity measurements show problems achieving homogeneous saturation, SPE-21433: SPE Formation Evaluation, v. 6(2), p. 134-140.
- Storms, M.A., 1990, Ocean Drilling Program (ODP) deep sea coring techniques: Marine Geophysical Researches, v. 12, p. 109-130.
- Straley, C., Morriss, C.E., Kenyon, W.E., and Howard, J.J., 1991, NMR in partially saturated rocks: laboratory insights on free fluid index and comparison with borehole logs, paper CC, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Sturrock, D.L., Cordell, G.M., Westacott, D.C., and Tizpatrick, D.M., 1991, Technological development synergy--Kisbey, Saskatchewan; a case history, in The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 373-396.
- Taherian, M.R., Kenyon, W.E., and Safinya, K.A., 1990, Measurement of dielectric response of water-saturated rocks: Geophysics, v. 55(12), p. 1530-1541.
- Taylor, M., and Eaton, N., 1990, Formation evaluation helps cope with lateral heterogeneities: Oil and Gas Journal, v. 88(47), November 19, p. 56-66.
- Tearpock, D.J., and Bischke, R.E., 1991, Log correlation techniques, chapter 4, in Applied subsurface geological mapping: Prentice Hall, Englewood Cliffs, NJ, p. 37-93.
- Tearpock, D.J., and Bischke, R.E., 1991, Directionally drilled wells and directional surveys, chapter 3, in Applied subsurface geological mapping: Prentice Hall, Englewood Cliffs, NJ, p. 21-36.

- Theys, P.P., 1991, Log data acquisition and quality control: Éditions Technip, Paris, 330 p.
- Thomas, E.C., and Steiber, S.J., 1975, The distribution of shale in sandstones and its effect upon porosity, paper T, in 16th annual logging symposium transaction: Society of Professional Well Log Analysts, 15 p. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 331-345.
- Tibbitts, G.A., Reed, M.G., and McCarter, M., 1990, New coring system reduces filtrate invasion, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 55-77.
- Tittman, J., 1991, Vertical resolution of well logs; recent developments: Schlumberger Oilfield Review, v. 3(3), July, p. 24-28.
- Tittman, J., 1991, Finding oil next to salt domes: Schlumberger Oilfield Review, v. 3(1), January, p. 4-7.
- Tobola, D.P., and Holditch, S.A., 1989, Determination of reservoir permeability from repeated induction logging, SPE-19606, in SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 355-370. Later published in 1991: SPE Formation Evaluation, v. 6(1), p. 20-26.
- Tomutsa, L., and Brinkmeyer, A., 1990, Using image analysis to determine petrophysical properties of reservoir rocks - topical report: U.S. Department of Energy Report No. NIPER-444, 18 p.
- Tomutsa, L., Mahmood, S.M., Brinkmeyer, A., and Honarpour, M., 1990, Application of integrated pore-to-core image analysis to study fluid distribution in reservoir rocks, SPE-20478, in SPE annual technical conference and exhibition, proceedings, v. gamma, Enhanced oil recovery/general petroleum engineering: Society of Petroleum Engineers, p. 137-148.
- Tumer, K., Torres, D., and Chemali, R., 1991, A new algorithm for automatic shoulder bed correction of dual laterolog tools, paper Q, in 32nd Annual Logging Symposium Transactions: Society of Professional Well Log Analysts, 21 p.
- van Poelgeest, F., Niko, H., and Medwid, A.R., 1989, Comparison of laboratory and in-situ measurements of waterflood residual oil saturations for the Cormorant field, SPE-19300, in SPE offshore Europe conference proceedings: Society of Petroleum Engineers. Later published in 1991: SPE Formation Evaluation, v. 6(1), p. 39-44.
- Vavra, C.L., Scheiing, M.H., and Klein, J.D., 1991, Reservoir geology of the Taylor Sandstone in the Oak Hill field, Rusk County, Texas—integration of petrology, sedimentology, and log analysis for delineation of reservoir quality in a tight gas sand, in The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 130-158.
- Vinegar, H.J., Tutunjian, P.N., Edelstein, W.A., and Roemer, P.B., 1989, ^{13}C NMR of whole cores, SPE-19590, in SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 201-212. Later published in 1991: SPE Formation Evaluation, v. 6(2), p. 183-189.
- Wang, Z., Hirsche, W.K., and Sedgwick, G., 1990, Seismic monitoring of water floods? A petrophysical study, RP2.1 [abs.], in Expanded abstracts with biographies, 1990 technical program: Society of Exploration Geophysicists, v. 1, p. 811-815.
- Watson, A.T., and Mudra, J., 1991, Characterization of Devonian shales with X-ray computed tomography, SCA-9122, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 12 p.

- Weaver, P.P.E., and Schulteiss, P.J., 1990, Current methods for obtaining, logging, and splitting marine sediment cores: *Marine Geophysical Researches*, v. 12, p. 85-100.
- Weiss, J.S., 1987, Determining dissolved-solids concentrations in mineralized ground water of the Gulf Coast aquifer systems using electric logs, *in* Vecchioli, J., and Johnson, A.I., editors, *Regional aquifer systems of the United States, aquifers of the Atlantic and Gulf Coastal Plain*: American Water Resources Association, Bethesda, MD, Monograph Series No. 9, p. 139-150.
- Wenli, K., Jiahua, W., and Yuanhua, Y., 1990, Geological well-log analysis for subtle reservoirs in Anse area, paper X, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 18 p.
- Wetzel, A., Williams, C., Kassens, H., Leger, G., and Auroux, C., 1990, Comparison between laboratory-determined physical properties and downhole measurements in outer Bengal fan deposits, chapter 30, *in* Cochran, J.R., Stow, D.A.V., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 116: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 369-374.
- Whittaker, A., 1991, *Mud logging handbook*: Prentice-Hall, Englewood Cliffs, NJ, 531 p.
- Wilson, R.E., Branco, J.E.R., van Heyst, B.G., and Turner, R.H., 1991, Sole Pit--improving the performance of a tight gas reservoir, an integrated approach, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 424-435.
- Wilt, M., and Ranganayaki, R.P., 1990, Surface-to-borehole electromagnetic logging for enhanced oil recovery (EOR) applications, EM3.1 [abs.], *in* Expanded abstracts with biographies, 1990 technical program: Society of Exploration Geophysicists, v. 1, p. 532-534.
- Withjack, E.M., Graham, S.K., and Yang, C-T., 1990, Determination of heterogeneities and miscible displacement characteristics in corefloods by CT scanning, SPE-20490, *in* SPE annual technical conference and exhibition, proceedings, v. gamma, Enhanced oil recovery/general petroleum engineering: Society of Petroleum Engineers, p. 213-224.
- Woessner, D.E., Gleeson, J.W., and Jordan, C.F. Jr., 1990, NMR imaging of pore structures in limestones, SPE-20493, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 19-25.
- Worthington, P.F., 1991, Effective integration of core and log data, SCA-9102, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Worthington, P.F., and Johnson, P.W., 1987, Quantitative evaluation of hydrocarbon saturation in shaly freshwater reservoirs, paper IPA 87-22/06, *in* 16th annual convention proceedings: Indonesian Petroleum Association, Jakarta, v. 2, p. 127-152. Later published in 1991: *The Log Analyst*, v. 32(4), p. 358-370.
- Worthington, P.F., and Pallatt, N., 1990, Effect of variable saturation exponent upon the evaluation of hydrocarbon saturation, SPE-20538, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 101-108.
- Yuan, H.H., 1991, Salinity dependence of shaly sand parameters for membrane potential measurements, SCA-9115, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 26 p.
- Zavoiskii, V.N., and Ivashchenko, I.N., 1990, Algorithms for core sample orientation by remnant magnetism: *Geophysical Journal* v. 9(5), p. 653-667. [original Russian paper published in 1987]
- Zhigao, W., 1990, A new approach to oil-saturation equations for log interpretation of oil-based mud and pressured-coring data in Jiyang Depression, paper H, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 19 p.

Zimmerman, T., MacInnis, J., Hoppe, J., Pop, J., 1990, Application of emerging wireline formation testing technologies, OSEA-90105, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 83-95.

III. MWD (Measurement While Drilling)

Ahmed, U., 1990, Production logging as an integral part of horizontal well transient pressure test, SPE-20980, in Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 355-366.

Alixant, J-L., 1990, Improved directional interpretation method, in Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 197-230..

Alixant, J.L., and Desbrandes, R., 1989, Real-time pore pressure evaluation options, paper TS-3-3, in International well control symposium and workshop [November 27-29, Baton Rouge, LA], proceedings: U.S. Minerals Management Service, 22 p.

Allen, D.F., Best, D.L., Evans, M., and Holenka, J., 1990, The effect of wellbore condition on wireline and MWD neutron-density logs, SPE-20563, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 345-356.

Badry, R., 1991, Production logs optimize horizontal tests: World Oil, v. 212(3), p. 59-98.

Betts, P., Blount, C., Broman, B., Clark, B., Hibbard, L., Louis, A., and Oosthoek, P., 1990, Acquiring and interpreting logs in horizontal wells: Schlumberger Oilfield Review, v. 2(3), July, p. 34-51.

Bryant, T.M., 1989, MWD acoustic and mud resistivity measurements for gas influx detection, paper TS-3-5, in International well control symposium and workshop [November 27-29, Baton Rouge, LA], proceedings: U.S. Minerals Management Service, 36 p.

Carlson, N.R., and Davarzani, M.J., 1990, Profiling horizontal oil/water production, SPE-20591, in SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 653-663. Later published in 1991: Journal of Petroleum Technology, v. 43(7), p. 780-785.

Clark, B., Allen, D.F., Best, D., Bonner, S.D., Jundt, J., Lüling, M.G., and Ross, M.O., 1988, Electromagnetic propagation logging while drilling; theory and experiment, SPE-18117, in 1988 SPE annual technical conference proceedings, v. omega, formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 103-117. Later published in 1990, SPE Formation Evaluation, v. 5(3), p. 263-271.

Clavier, C., 1991, The challenge of logging horizontal wells: The Log Analyst, v. 32(2), March-April, p. 63-84.

Coope, D.F., 1990, Logging horizontal well bores Using MWD, paper O, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 12 p.

Coudeyre, M., Le Goc, B., and Lombez, J.P., 1991, Guiding a horizontal well using geological monitoring: World Oil, v. 212(7), p. 59-64.

Cramer, D.D., 1991, Stimulation treatments in the Bakken Formation--implications for horizontal completions, in Hanse, W.B., editor, 1991 guidebook to geology and horizontal drilling of the Bakken Formation: Montana Geological Society, 117-140.

Cunningham, A.B., Bullion, D., and Opstad, E.A., 1990, Use of MWD formation evaluation in the Endicott reservoir, North Slope, Alaska, USA, paper C, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p.

- Day, S.N.J., and Petler, J.S., 1990, Tool-motion and borehole environmental effects on MWD neutron porosity, paper A, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 14 p.
- Desbrandes, R., 1990, Invasion diameter and supercharging in time-lapse MWD/LWD logging, in Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 115-135.
- Desbrandes, R., 1990, Interpretation of MWD dual-resistivity measurements--permeability estimate, in Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 147-157.
- Desbrandes, R., 1990, An overview of measurement while drilling/logging while drilling technology, in Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 5-46.
- Eaton, N., 1990, Coring the horizontal hole, in Weiner, P.D., and Kastor, R.L., editors, Drilling technology symposium 1990, proceedings: The American Society of Mechanical Engineers, New York, 13th Annual Energy-sources Technology Conference, v. PD-27, p. 65-69.
- Evans, H.B., 1991, Evaluating differences between wireline and MWD systems: World Oil, v. 212(4), April, p. 51-61, 136.
- Fertl, W.H., and Nice, S.B., 1990, Well logging and completion technology for horizontal wellbores: Transactions Gulf Coast Association of Geological Societies, v. 40, p. 217-226. Also published in 1990 as Nice, S.B., and Fertl, W.H., New logging, completion techniques boost horizontal well productivity: Petroleum Engineer International, v. 62(11), p. 20-29. Condensed version published in 1991, as Logging, completing extended-reach and horizontal wells: World Oil, v. 212(3), March, p. 49-56.
- French Oil and Gas Industry Association Technical Committee, 1990, Directional drilling and deviation control technology: Gulf Publishing Company, 138 p.
- French, A., 1990, Horizontal coring using air as the circulating fluid--some prototype studies conducted in G tunnel at the Nevada Test Site from the Yucca Mountain project, in Weiner, P.D., and Kastor, R.L., editors, Drilling technology symposium 1990, proceedings: The American Society of Mechanical Engineers, New York, 13th Annual Energy-sources Technology Conference, v. PD-27, p. 59-64.
- Gianzero, S., Chemali, R., and Su, S.M., 1990, Induction, resistivity, and MWD tools in horizontal wells, in Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 97-114.
- Hall, D.J., Walker, J.L., Schmelzl, E.G., and Haène, T.B., 1991, Logging and perforating of horizontal wells--an innovative approach, SPE-21836, in Rocky Mountain regional and low-permeability reservoirs symposium, proceedings: Society of Petroleum Engineers, p. 307-316.
- Holbrook, P., 1990, An accurate rock mechanics approach to pore pressure/fracture gradient prediction, in Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 181-196.
- Jacobsen, S.J., Fett, T.H., Singer, J.M., and Ahmed, U., 1991, Horizontal wells--concepts in reservoir evaluation, SPE-21837, in Rocky Mountain regional and low-permeability reservoirs symposium, proceedings: Society of Petroleum Engineers, p. 317-335.
- Joshi, S.D., 1991, Logging, in Fritz, R.D., Horn, M.K., and Joshi, S.D., editors, Geological aspects of horizontal drilling: AAPG, Continuing Educations Course Note Series No. 33, p. 471-482.
- Lasserre, D., 1990, Formation evaluation in highly-deviated, long reach development wells on the North Rankin gas field, NW Shelf, Australia: APEA [Australian Petroleum Exploration Association] Journal, v. 30, part 1, p. 310-318.

- Leake, J., and Shray, F., 1991, Logging while drilling keeps horizontal well on small target: *Oil and Gas Journal*, v. 89 (38), September 23, 1991, p. 53-59.
- Logan, R.B., Schroeder, T.S., and Zoeller, W.A., 1990, Applications of an MWD propagation resistivity and neutron porosity tool, paper B, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 16 p.
- Mari, J.L., Wittrisch, C., Goepfer, R., and Spreux, A.M., 1989, Vertical seismic profile in horizontal wells, SPE-19856, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 579-590. Later published in 1990, *Journal of Petroleum Technology*, v. 42(12), 1,486-1,493.
- Montgomery, S., 1990, Horizontal drilling--a survey of domestic case histories: *Petroleum Frontiers [Petroleum Information]*, v. 7(2), 46 p.
- Montgomery, S.L., 1990, Logging horizontal wells, chapter 6, *in* Techniques of horizontal drilling--concepts and consequences: *Petroleum Frontiers*, v. 7(1), p. 33-36.
- Nice, S.R., and Fertl, W.H., 1990, Logging requirements and completion techniques for extended-reach and horizontal boreholes, paper K, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 17 p.
- Paske, W.C., Rao, M.V., Twist, J.R., Mack, S.G., and Spross, R.L., 1990, Theory and implementation of a borehole-caliper measurement made while drilling, SPE-20562, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p.
- Rasmus, J.C., and Stephens, D.M.R.G., 1990, Real-time pore pressure evaluation utilizing MWD/LWD measurements and drilling-derived formation strength, SPE-20443, *in* SPE annual technical conference and exhibition, proceedings, v. delta, Drilling: Society of Petroleum Engineers, p. 403-411.
- Rasmus, J., and Voisin, B., 1990, A framework to estimate pore pressures in real-time, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 159-180.
- Skopec, R.A., 1991, In-situ stress evaluation in core analysis, SCA-9103, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Skopec, R.A., Mann, M.M., Jeffers, D., and Grier, S.P., 1990, Horizontal-core acquisition and orientation for formation evaluation, SCA-9017, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 32 p. Also published in 1990 as SPE-20418, *in* SPE annual technical conference and exhibition, proceedings, v. delta, drilling: Society of Petroleum Engineers, p. 153-166.
- Simms, G.J., and Koopersmith, C.A., 1989, Hydrocarbon type identification using MWD neutron porosity logging; a case study, SPE-19620, *in* SPE annual technical conference and exhibition, proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 495-504.
- Sutcliff, B., and Sim, D., 1991, Drilling optimized by monitoring BHA dynamics with MWD: *Oil and Gas Journal*, v. 89(12), March 25, p. 41-45.
- Taylor, M.R., 1989, Prevention or cure--kick avoidance and detection using MWD in an integrated wellsite information management system, paper TS-3-1, *in* International well control symposium and workshop [November 27-29, Baton Rouge, LA], proceedings: U.S. Minerals Management Service, 12 p.
- Taylor, M.R., 1990, Geological evaluation in horizontal wells, OSEA-90188, *in* 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 353-366.
- Tearpock, D.J., and Bischke, R.E., 1991, Directionally drilled wells and directional surveys, chapter 3, *in* Applied subsurface geological mapping: Prentice Hall, Englewood Cliffs, NJ, p. 21-36.

Turvill, J., 1990, A perspective on the future roll of MWD systems, in 37th annual short course proceedings: Southwestern Petroleum Short Course Association, Lubbock, Texas, p. 71-80.

Woodhouse, R., Opstad, E.A., and Cunningham, A.B., 1991, Vertical migration of invaded fluids in horizontal wells, paper A, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 20 p.

IV. Cased Hole and Production Logging; Determination of ROS

(See also V. Nuclear logging)

Ahmed, U., 1990, Production logging as an integral part of horizontal well transient pressure test, SPE-20980, in Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 355-366.

Ahmed, U., Markley, M.E., Crary, S.F., and Liu, O.Y., 1989, Enhanced in-situ stress profiling using microfrac, core and sonic-logging data, SPE-19004, in SPE joint Rocky Mountain regional/low permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 707-719. Later published in 1991: SPE Formation Evaluation, v. 6(2), p. 243-251.

Badry, R., 1991, Production logs optimize horizontal tests: *World Oil*, v. 212(3), p. 59-98.

Bigelow, E.L., and Domangue, E.J., 1990, An effective new technology for evaluation of cement integrity: the Segmented Bond Log, paper Y, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 12 p.

Bigelow, E.L., Domangue, E.J., and Lester, R.A., 1990, A new and innovative technology for cement evaluation, SPE-20585, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 579-590

Bonnie, R.J.M., 1991, Evaluation of various pulsed neutron capture logging tools under well-defined laboratory conditions, paper OO, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 11 p.

Broglia, C., and Ellis, D., 1990, Effect of alteration, formation absorption, and standoff on the response of the thermal neutron porosity log in gabbros and basalts—Examples from Deep Sea Drilling Project-Ocean Drilling Program sites: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9171-9188.

Butsch, R.J., and Vacca, H.L., 1990, Experimental pulsed-neutron porosity for gas-filled boreholes in the Gulf Coast, SPE-20588, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 619-627.

Carlson, N.R., 1991, Profiling gas-water flows in deviated pipe, paper M, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 16 p.

Carlson, N.R., and Davarzani, M.J., 1990, Profiling horizontal oil/water production, SPE-20591, in SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 653-663. Later published in 1991: *Journal of Petroleum Technology*, v. 43(7), p. 780-785.

Catala, G., de Montmollin, V., Hayman, A., Hutin, R., Rouault, G., Guillot, D., Jutten, J., Qureshi, Y., Kelly, B., Piot, B., Simien, T., and Toma I., 1991, Modernizing well cementing design and evaluation: *Schlumberger Oilfield Review*, v. 3(2), April, p. 55-71.

Chopra, P.N., de Bruyn, C.J., and Mathew, P.J., 1989, Demonstration of a primary calibration of a formation density well-logging tool: *Exploration Geophysics [Bulletin of the Australian Society of Exploration Geophysicists]*, v. 20(3), p. 403-410.

- Cigni, M., and Magrassi, M., 1990, Radioactive and sonic measures recorded in cased hole—how to use them to quantitatively evaluate the remaining hydrocarbon saturation, paper HH, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 23 p.
- Dunn, K.J., Guo, D.S., and Zalman, T.A., 1991, Gas/steam saturation effect on pulsed neutron capture count rates, paper NN, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Ehlig-Economides, C., Ebbs, D., Fetkovich, M., and Meehan, D.N., 1990, Factoring anisotropy into well design: Schlumberger Oilfield Review, v. 2(4), October, p. 24-33.
- Ehlig-Economides, C.A., Joseph, J.A., Ambrose, R.W., Jr., and Norwood, C., 1989, A modern approach to reservoir testing, SPE-19814, in SPE annual technical conference and exhibition proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 429-443. Later published in 1990, Journal of Petroleum Technology, v. 42(12), p. 1,554-1,563.
- Estabrook, R.M., 1990, A comprehensive study of dry-steam flowmeter accuracy at the Geysers geothermal field: Geothermal Resources Council Transactions, v. 14, part 1, p. 387-394.
- Feather, G., 1991, A review of formation, cement bond logging, production logging (short course notes): Society of Professional Well Log Analysts, Tulsa Chapter, variously paginated
- Gang, X.Z., Golan, M., Sveen, J., 1990, Determining downhole flow rates of oil and gas in oil wells using pressure drop and spinner response measurements, SPE-20893, in Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 105-127.
- Georgi, D.T., Heavysege, R.G., Chen, S.T., and Eriksen, E.A., 1989, Application of shear and compressional transit-time data to cased-hole carbonate reservoir evaluation, paper L, in 12th formation evaluation symposium transactions: Canadian Well Logging Society, 24 p. Later published in 1991, The Log Analyst, v. 32(3), p. 129-143.
- Georgi, D.T., Pritchard, D.W., Hemingson, P.A., 1991, Wireline log contributions to the evaluation of the Judy Creek hydrocarbon miscible flood pilot, paper RR, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Gould, J., Wackler, J., Quirein, J., and Watson, J., 1991, CO₂ monitor logging—east Mallet Unit Slaughter field, Hockley County, Texas, paper PP, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- Graham, P.D., 1989, Advances in downhole corrosion evaluation, in 36th annual short course proceedings: Southwestern Short Course Association, Lubbock, Texas, p. 217-240.
- Haimin, G., and Renjie, C., 1990, An interpretative method for production well logs in multiphase flow, paper II, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 21 p.
- Hayman, A.J., Hutin, R., and wright, P.V., 1991, High-resolution cementation and corrosion imaging by ultrasound, paper KK, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Hicks, P.J., Jr., Deans, H.A., and Narayanan, K., 1990, Experimental measurement of the distribution of residual oil saturations in heterogeneous carbonate cores using X-ray computerized tomography, paper 90-68, in Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 12 p. Also published in 1990 as paper SPE-21574: Society of Petroleum Engineers, unsolicited.
- Holcomb, D.L., Reed, D.A., and Conway, M., 1991, How to use tracers to evaluate proppant distribution: Petroleum Engineer International, v. 63(1), January, p. 28-33.

- Howard, W.E., and Bolin, J.S., 1988, Improved logging behind casing and technology support for advanced formation evaluation: Gas Research Institute Report No. GRI-88/211, 106 p.
- Hunt, E., 1991, Frac height may increase away from well bore: Oil and Gas Journal, v. 89(8), February 25, p. 33-36.
- Jacobson, L.A., Beals, R., Wyatt, D.F., Jr., and Hrametz, A., 1991, Response characterization of an induced gamma spectrometry tool using a bismuth-germanate scintillator, paper LL, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 18 p.
- Johnson, A., and Scanlon, M.E., 1989, Pulsed-neutron monitoring in the Bunter sands of the Esmond complex, SPE-19294, in SPE offshore Europe conference proceedings: Society of Petroleum Engineers. Later published in 1991: SPE Formation Evaluation, v. 6(3), p. 327-332.
- Jutten, J., and Morriss, S.L., 1990, Cement job evaluation, chapter 16, in Nelson, E.B., editor, Well cementing: Elsevier, Amsterdam, Developments in Petroleum Science No. 28, p. 16-1-16-44.
- Kimminau, S.J., and Plasek, R.E., 1990, The design of pulsed-neutron reservoir-monitoring programs, SPE-20589, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 629-638.
- Kirsch, D., Edgson, J., McDonald, J., and McKenzie, R., 1990, Pulsed neutron capture evaluation of Upper Cretaceous Milk River gas sands, paper 90-74, in Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 22 p.
- Mansure, A.J., Meldau, R.F., and Weyland, H.V., 1990, Field examples of electrical resistivity changes during steamflooding, SPE-20539, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 109-119.
- Masse, P.J., Gosney, T.C., and Long, D.L., 1990, The use of pulsed-neutron capture logs to identify steam breakthrough--case study; South Belridge middle expansion steamflood project, SPE/DOE-20252, in SPE/DOE symposium on enhanced oil recovery proceedings: Society of Petroleum Engineers, p. 773-784. Later published in 1991: SPE Formation Evaluation, v. 6(3), p. 319-326.
- McKeon, D.C., Scott, H.D., Olesen, J-R., Patton, G.L., and Mitchell, R.J., 1990, Improved method for determining water flow behind casing using oxygen activation, SPE-20586, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 591-603. Later published in 1991: SPE Formation Evaluation, v. 6(3), p. 334-342.
- McKeon, D.C., Scott, H.D., and Patton, G.L., 1991, Interpretation of oxygen activation logs for detecting water flow in producing and injection wells, paper BB, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- McKinley, R.M., 1989, Temperature and noise logging for noninjection related fluid movement, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 45-63.
- Miller, W.K., II, Peterson, R.E., Stevens, J.E., Lackey, C.B., and Harrison, C.W., 1991, In-situ stress profiling and prediction of hydraulic fracture azimuth for the Canyon Sands Formation, Sonora and Sawyer fields, Sutton County, Texas, SPE-21848, in SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 445-456.
- Mullen, J., 1991, Cased hole coal analysis in producing gas wells in the San Juan Basin, paper 9135, in 1991 Coalbed methane symposium proceedings: University of Alabama College of Continuing Studies, p. 373-380.
- Murphy, K., Wyrdrinski, R., Feldman, D.S., and Miller, R., 1991, Planning and interpreting cement bond logs; implementation of an expert system: SPE Computer Applications, July-August, p. 23-25.

- Nerby, G., 1990, A new approach to production log analysis, in Buller, A.T., Berg, E., et al., editors, North Sea oil and gas reservoirs II: Graham & Trotman, London, p. 185-199.
- Newman, K.R., Corrigan, M., Kehoe, G.P., Douglas, D., and Torre, A.J., 1990, Assisted lift production logging with coiled tubing, OSEA-90142, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 693-703.
- Paap, H.J., Nussbaum, T.W., and Supernaw, I.R., 1989, The oxygen activation log; a laboratory evaluation, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 25-43.
- Palmer, I.D., and Kutas, G.M., 1991, Hydraulic fracture height growth in San Juan basin coalbed, SPE-21811, in SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 71-88.
- Pathak, P., 1990, Impact of fluid-displacement effects on log-inject-log tests, SPE-20590, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 639-652.
- Roscoe, A., Stoller, C., Adolph, R.A., Boutemy, Y., Cheeseborough, J.C. III, Hall, J.S., McKeon, D.C., Pittman, D., Seeman, B., and Thomas, S.R., Jr., 1991, A new through-tubing oil-saturation measurement system, SPE-21413, in SPE international Arctic technology conference [May 29-31, Anchorage, AK] proceedings: Society of Petroleum Engineers, p. 83-92
- Rouillac, D., 1990, Active witnessing in cement bond logging, SPE-20927, in Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 413-420.
- Ruhovets, N., and Wyatt, D.F., 1990, Quantitative monitoring of gas flooding in oil-bearing reservoirs using a pulsed-neutron tool, paper W, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 12 p.
- Schwanitz, B.J., and Barba, R.E., 1989, Determining injection pressure limits with wireline and testing inputs, in 36th annual short course proceedings: Southwestern Short Course Association, Lubbock, Texas, p. 217-240.
- Scott, H.D., Pearson, C.M., Renke, S.M., McKeon, D.C., and Meisenhelder, J.P., 1991, Applications of oxygen activation for injection and production profiling in the Kuparuk River field, SPE-22130, in SPE international Arctic technology conference [May 29-31, Anchorage, Alaska] proceedings: Society of Petroleum Engineers, p. 555-565.
- Scott, H.D., Stoller, C., Roscoe, B.A., Plasek, R.E., and Adolph, R.A., 1991, A new compensated through-tubing carbon/oxygen tool for use in flowing wells, paper MM, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Shuying, Z., 1990, Pumping-well annulus-water locator and its application, paper JJ, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 25 p.
- Slingaard, C., Smestad, P., 1990, Noise and temperature logging used to determine underground blowout flow path, paper U, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 15 p.
- Sun, M.Y., 1991, Radiotracer well logging in the petroleum industry in China: Nuclear Geophysics, v. 5(1/2), p. 109-115.
- Theys, P.P., 1991, Log data acquisition and quality control: Éditions Technip, Paris, 330 p.
- Thompson, J.C., and Klimo, C.R., 1990, Pulsed-neutron log-interpretation case histories from inland and offshore south Louisiana, SPE-20587, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 605-617.

- Thornhill, J.T., 1990, Injection well mechanical integrity: U.S. Environmental Protection Agency Report No. EPA/625/9-89/007, 132 p.
- van Poelgeest, F., Niko, H., and Medwid, A.R., 1989, Comparison of laboratory and in-situ measurements of waterflood residual oil saturations for the Cormorant field, SPE-19300, in SPE offshore Europe conference proceedings: Society of Petroleum Engineers. Later published in 1991: SPE Formation Evaluation, v. 6(1), p. 39-44.
- Vogelij, H.N.J., Leach, M., and Kapteyn, P., 1990, Multilayer flowmeter testing combined with 3-D field modeling to enhance the Ameland field development, SPE-20897, in Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 161-169.
- Walbe, K., and Collart, D., 1991, Use of the borehole television camera and the low-volume flowmeter to identify and measure gas flow in low-permeability formations, SPE-21835, in SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 299-306.
- Wafra, M., 1989, Downhole casing corrosion and interpretation techniques to evaluate corrosion in multiple casing strings, SPE-17931, in SPE Middle East oil technical conference and exhibition [Manama, Bahrain] proceedings: Society of Petroleum Engineers, p. 55-66. Later published in 1991: SPE Production Engineering, v. 6(3), p. 283-290.
- Watson, J.T., Carpenter, W.W., Carroll, J.F., and Smith, B.C., 1990, Gravel pack field examples of a new pulsed neutron activation logging technique, OTC-6464, in Offshore technology conference proceedings, v. 4: Society of Petroleum Engineers, p. 351-356.
- Wiesneneck, J.B., 1989, Practical experience with oxygen activation logging in south Mississippi, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 7-24
- Williams, T.M., 1987, Measuring behind casing water flow, paper IPA-87-23/17, in 16th annual convention proceedings: Indonesian Petroleum Association, Jakarta, v. 2, p. 153-165.
- Willis, G.B., 1991, Estimating fracture height from gamma-ray spectroscopy of radioactive tracers; a case study, SPE-21833, in SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 275-285.
- Wood, K.N., Tang, J.S., and Luckasavitch, R.J., 1990, Interwell residual oil saturation at Leduc miscible pilot, SPE-20543, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 143-155.
- Yearsley, E.N., Crowder, R.E., and Irons, L.A., 1991, Monitoring well completion evaluation with borehole geophysical density logging: Ground Water Monitoring Review, v. 11(1), p. 103-111.
- Ying, L., 1990, An experimental study on NLL for monitoring reservoirs, paper GG, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 21 p.

V. Acoustic Logging (Including P and S, Full Waveform, Borehole Seismic, and VSP) (See also 15. Fracture detection)

- Abdulla, A.A., Stewart, R.R., and Henley, D.C., 1990, Travetime inversion and reflection processing of cross-hole seismic data, BG2.8, in Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 47-50.
- Al-Khafaji, A.H., Jabur, M.A., and Al-Mashat, A.M., 1988, Gas-brine contact detection by sonic wave velocities: Journal of Petroleum Research, v. 7(1), p. 1-12.

- Arditty, P.C., Schein, F., and Staron, P., 1988, Imaging of fractured reservoirs using the EVA tool, paper IPA 88-22.01, in 17th annual convention proceedings: Indonesian Petroleum Association, Jakarta, p. 151-169.
- Bensen, A.K., 1991, Application of shear, compressional, and V_s/V_p data to evaluate subsurface geology and associated conditions and hazards, in 27th symposium on engineering geology and geotechnical engineering [April 10-12, Logan, Utah], proceedings: Utah State University, Logan, Utah, p. 39-1-39-18.
- Beydoun, W.B., 1990, Reservoir characterization from crosshole seismic--new directions, in Buller, A.T., Berg, E., et al., editors, North Sea oil and gas reservoirs II: Graham & Trotman, London, p. 116-124.
- Bigelow, E.L., Domangue, E.J., and Lester, R.A., 1990, A new and innovative technology for cement evaluation, SPE-20585, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 579-590
- Burns, D.R., 1990, Acoustic-waveform logs and the in-situ measurement of permeability--a review, in Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 65-78.
- Burns, D.R., 1991, Predicting relative and absolute variations of in-situ permeability from full-waveform acoustic logs: The Log Analyst, v. 32(3), p. 246-255.
- Chen, S.T., and Eriksen, E.A., 1991, Compressional- and shear-wave logging in open and cased holes using a multipole tool: Geophysics, v. 56(4), p. 550-557. Also published in 1991 in abridged form as, Record P- and S-waves in cased or open wellbores: World Oil, v. 212(7), p. 85-94.
- Davis, R.W., 1989, Developments in cross borehole tomography, in Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 262-274.
- Domenico, S.N., 1984, Rock lithology and porosity determination from shear and compressional wave velocity: Geophysics, v. 49, p. 1,188-1,195. Later reprinted in 1989, in Nur, A.M., and Wang, Z., editors, Seismic and acoustic velocities in reservoir rocks, v. 1, experimental studies: Society of Exploration Geophysicists Reprint Series No. 10, p. 120-127.
- Dunlop, K.N.B., King, G.A., and Breitenbach, E.A., 1988, Monitoring of oil/water fronts by direct measurement, SPE-18271, in SPE annual technical conference and exhibition proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 91-99. Later published in 1991: Journal of Petroleum Technology, v. 43(5), p. 596-602.
- Ellis, D., Howard, J., Flaum, C., McKeon, D., Scott, H., Serra, O., Simmons, G., 1988, Mineral logging parameters--Nuclear and acoustic: The Technical Review, v. 36(1), p. 38-52. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 460-474.
- Frykman, P., and Stenoft, N., 1989, Diagenetic pore geometry and sound velocity response in Danish Zechstein carbonates, in Impariso, G., Firas, M., and Bemtgen, J.M., editors, Hydrocarbons; source of energy [proceeding of the meeting, "Optimization of the production and utilization of hydrocarbons," Lyon, France, September 21-23, 1988]: Graham & Trotman, London, p. 95-103
- Gallagher, J.G., Jr., 1991, Maximum entropy litho-porosity volume fraction predictions from V_p/V_s ratio measurements, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 382-401.
- Georgi, D.T., Heavysege, R.G., Chen, S.T., and Eriksen, E.A., 1989, Application of shear and compressional transit-time data to cased-hole carbonate reservoir evaluation, paper L, in 12th formation evaluation symposium transactions: Canadian Well Logging Society, 24 p. Later published in 1991, The Log Analyst, v. 32(3), p. 129-143.

- Goetz, J.F., Seiler, D.D., and Edmiston, C.S., 1990, Geological and borehole features described by the Circumferential Acoustic Scanning Tool, paper Z, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p. Also published in 1990, as paper OSEA-90113, *in* 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 1-18.
- Gogonenkow, G.N., 1990, Acoustic and density properties of sedimentary sections, chapter 1, *in* Seismic prospecting for sedimentary formations: A.A. Balkema, Rotterdam, The Netherlands, Russian Translations Series No. 76, p. 6-32.
- Greaves, R.J., Beydoun, W.B., and Spies, B.R., 1991, New dimensions in geophysics for reservoir monitoring, SPE-20170: SPE Formation Evaluation, v. 6(2), p. 141-150.
- Grereton, N.R., and McCann, D.M., 1990, A fresh look at predictive equations for compressional wave velocity--porosity, *in* Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 270-298.
- Han, D.-H., Nur, A., and Morgan, D., 1986, Effects of porosity and clay content on wave velocities in sandstones: Geophysics, v. 51(11), November, p. 2093-2107. Discussion and reply published in 1987, Geophysics, v. 52(10), October, p. 1439-1441. Later reprinted in 1989, *in* Nur, A.M., and Wang, Z., editors, Seismic and acoustic velocities in reservoir rocks, v. 1, experimental studies: Society of Exploration Geophysicists Reprint Series No. 10, p. 128-142.
- Harris, J.M., Tan, H., Lines, L., Pearson, C., Trietel, S., Mavko, G., Moss, D., and Heeksma, R.N., 1990, Cross-well tomographic imaging of geological structures in Gulf Coast sediments, BG2.5, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 37-40.
- Harrison, A.R., Randall, C.J., Aron, J.B., Morris, C.F., Wignall, A.H., Dworak, R.A., Rutledge, L.L., and Perkins, J.L., 1990, Acquisition and analysis of sonic waveforms from a borehole monopole and dipole source for the determination of compressional and shear speeds and their relation to rock mechanical properties and surface seismic data, SPE-20557, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 267-282
- Hirsche, W.K., Wang, Z., and Sedgwick, G., Seismic monitoring of miscible/immiscible flood, part I--Petrophysical studies, RP2.2 [abs.], *in* Expanded abstracts with biographies, 1990 technical program, : Society of Exploration Geophysicists, v. 1, p. 816-819.
- Hornby, B.E., Murphy, W.F., III, Liu, H.-L., and Hsu, K., 1990, Full-waveform-sonic logging in a North Sea reservoir, CH4.6, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 253-257.
- Inderwiesen, P.L., and Lo, T.-w., 1990, Cross-hole seismic tomographic imaging of reservoir inhomogeneities in the Midway-Sunset field, California, BG2.1, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 22-25.
- Justice, J.H., Mathisen, M.E., Vassiliou, A.A., Singh, Cunningham, P.S., and Bulau, J.R., 1991, Acoustic tomography for reservoir surveillance, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 159-170.
- Kaneko, F., Kanemori, T., and Tonouchi, K., 1990, Low-frequency shear-wave logging in unconsolidated formations for geotechnical applications, *in* Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 79-98.

- Klimentos, T., 1990, Attenuation of P- and S-waves as a method of distinguishing gas from oil and water, BG5.1, in Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 102-105.
- Krief, M., Garat, J., Stellingwerff, J., and Ventre, J., 1989, A new petrophysical interpretation using the velocities of P- and S-waves (full waveform sonic), paper HH, in 12th international formation evaluation symposium transactions: Society of Professional Well Log Analysts, Paris Chapter (SAID), 9 p. Later published in 1990, The Log Analyst, v. 31(6), November-December, p. 355-369.
- Kurkjian, A.L., Lang, S.W., and Hsu, K., 1991, Slowness estimation from sonic logging waveforms: Geoexploration, v. 27, p. 215-256.
- Lawson, D.A., 1991, Interwell geology from geophysical data, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 442-459.
- Lo, T-W., Inderwiesen, P.L., Howlett, D.L., Melton, D.R., Livingston, N.D., Paulsson, B.N.P., and Fairborn, J.W., 1990, McKittrick cross-well seismology project, part II--tomographic processing and interpretation, BG2.3, in Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 30-33.
- Loren, J.D., Kulha, J.T., Renbarger, K.S., and Sneider, R.M., 1991, Reservoir properties inferred from seismic response in areas with minimal log control, in The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 271-280.
- Lucet, N., Rasolofosaon, P.N.J., and Zinzner, B., 1991, Sonic properties of rocks under confining pressure using the resonant bar technique: Journal of the Acoustical Society of America, v. 89(3), p. 980-990.
- Mari, J.L., Wittrisch, C., Goepfer, R., and Spreux, A.M., 1989, Vertical seismic profile in horizontal wells, SPE-19856, in SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 579-590. Later published in 1990, Journal of Petroleum Technology, v. 42(12), 1486-1493.
- Marion, D., and Nur, A., 1991, Pore-filling material and its effect on velocity in rocks: Geophysics, v. 56(2), p. 225-230.
- McDougall, J.G., and Howard, M.G., 1989, Advances in borehole imaging with second-generation CBIL [circumferential borehole imaging log] borehole televiewer instrumentation, paper 12, in 28th annual conference proceedings: Ontario Petroleum Institute Inc., Lambeth, Ontario, Canada, 14 p.
- Medlin, W.L., and Alhilali, K.A., 1990, Shear wave porosity logging in sands, SPE-20558, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 283-293.
- Murphy, W.F., Schwartz, L.M., and Hornby, B., 1991, Interpretation physics of V_p and V_s in sedimentary rocks, paper FF, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Paillet, F.L., 1991, Qualitative and quantitative interpretation of fracture permeability using acoustic full-waveform logs: The Log Analyst, v. 32(3), p. 256-270.
- Pardus, Y.C., Conner, J., Schuler, N.R., and Tatham, R.H., 1990, V_p/V_s and lithology in carbonate rocks; a case study in the Scipio trend in southern Michigan, CH1.5, in Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 169-172.
- Paulsson, B.N.P., 1991, Cross-well seismology--A tool for reservoir geophysics, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 460-476.

- Podio, A.L., and Gregory, A.R., 1990, Ultrasonic velocity and attenuation measurements in water-based drilling muds, *in* Weiner, P.D., and Kastor, R.L., editors, *Drilling technology symposium 1990, proceedings: The American Society of Mechanical Engineers, New York, 13th Annual Energy-sources Technology Conference*, v. PD-27, p. 135-140.
- Raymer, L.L., Hunt, E.R., and Gardner, J.S., 1980, An improved sonic transit time-to-porosity transform, paper P, *in* 21st annual logging symposium transactions: Society of Professional Well Log Analysts, 12 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16*, p. 367-379.
- Sams, M., 1991, High-resolution velocity and attenuation logs from long-spaced sonic data: *Geophysics*, v. 56(7), p. 1071-1080.
- Sanders, L., Kessler, C., 1990, Techniques for hydrocarbon detection using data from the full wave sonic, *in* 37th annual short course proceedings: Southwestern Petroleum Short Course Association, Lubbock, Texas, p. 205-210.
- Sonneland, L., Barkved, O., and Haagenes, O., 1990, Reservoir characterization by seismic classification maps, SPE-20544, *in* SPE annual technical conference exhibition proceedings, v. omega, *Formation evaluation and reservoir geology: Society of Petroleum Engineers*, p. 157-162.
- Tao, G., and King, M.S., 1990, An improved acoustic velocities-to-porosity transform for sonic-log interpretation, paper B, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 19 p.
- Taylor, T.J., 1983, Interpretation and application of borehole televiewer surveys, paper QQ, *in* 24th annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16*, p. 591-609.
- Tittman, J., 1990, Shear wave logging with dipoles: *Schlumberger Oilfield Review*, v. 2(4), p. 9-12.
- Tosaya, C., and Nur, A., 1982, Effects of diagenesis and clays on compressional velocities in rocks: *Geophysical Research Letters*, v. 9(1), p. Later reprinted in 1989, *in* Nur, A.M., and Wang, Z., editors, *Seismic and acoustic velocities in reservoir rocks, v. 1, experimental studies: Society of Exploration Geophysicists Reprint Series No. 10*, p. 116-119.
- Towle, G.H., Mueller, T.L., and Whitman, W.W., 1989, The use of laboratory and in-situ measurements of acoustic velocity for seismic modeling: *Canadian Well Logging Society Journal*, v. 17, no. 1, p. 5-24.
- Wang, Z., Hirsche, W.K., and Sedgwick, G., 1990, Seismic monitoring of water floods? A petrophysical study, RP2.1 [abs.], *in* Expanded abstracts with biographies, 1990 technical program: Society of Exploration Geophysicists, v. 1, p. 811-815.
- Wang, Z., Hirsche, W.K., and Sedgwick, G., 1990, Seismic velocities in carbonate rocks, paper 90-71, *in* Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 21 p.
- Wang, Z., and Nur, A., 1986, Effect of temperature on wave velocities in sands and sandstones with hydrocarbons, SPE-15645: Society of Petroleum Engineers, 61st annual meeting [New Orleans] preprint, 8 p. Also published in 1986, *in* Expanded abstracts with biographies, 1986 technical program [Houston]: Society of Economic Geophysicists, p. 3-5. Later published in 1988, *SPE Reservoir engineering*, v. 3(1), p. 158-164. Later reprinted in 1989, *in* Nur, A.M., and Wang, Z., editors, *Seismic and acoustic velocities in reservoir rocks, v. 1, experimental studies: Society of Exploration Geophysicists Reprint Series No. 10*, p. 188-194.
- Woofter, D.M., and MacGillivray, J., 1990, Brassey Canada; development of an aeolian sands—a team approach; SPE-20546, *in* SPE annual technical conference exhibition proceedings, v. omega, *Formation evaluation and reservoir geology: Society of Petroleum Engineers*, p. 163-174.

VI. Nuclear Logging; Geochemical Logging (Elemental Analysis)

(See also IV. Cased hole logging; 18. Mineral evaluation)

- Anderson, R.N., 1990, Geochemistry and geophysics of the Moodus, Connecticut, drillhole from well logs, and the fluid flux associated with movement along low-angle thrust faults: *Scientific Drilling*, v. 1(5), p. 238-252.
- Anderson, R.N., Alt, J.C., Malpas, J., Lovell, M.A., Harvey, P.K., and Pratson, E.L., 1990, Geochemical well logging in basalts—the Palisades sill and the oceanic crust of hole 504B: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9265-9292.
- Basu, S., 1990, Clay mineralogy and pressure analysis from seismic information in Krishna-Godavari basin, India: *Geophysics*, v. 55(11), p. 1,447-1,454.
- Borsaru, M., Charbucinski, J., Eisler, P., and C. Ceravolo, C., 1991, Neutron-gamma logging in coal seams of variable iron content: *Nuclear Geophysics*, v. 5(1/2), p. 117-122.
- Butsch, R.J., and Vacca, H.L., 1990, Experimental pulsed-neutron porosity for gas-filled boreholes in the Gulf Coast, SPE-20588, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 619-627.
- Carroll, J.F., Scott, H.D., Gunn, R.A., and O'Brien, M.S., 1990, Naturally occurring radioactive material logging, SPE-20616, *in* SPE annual technical conference and exhibition, proceedings, v. pi, Production operations and engineering: Society of Petroleum Engineers, p. 35-42.
- Ellis, D.V., 1990, Some insights on neutron measurements: *IEEE Transactions on Nuclear Science*, v. 37(2), April, p. 959-965.
- Ellis, D.V., 1990, Neutron and Gamma-ray scattering measurements for subsurface geochemistry: *Science*, v. 250(4977), October 5, p. 82-87.
- Ellis, D., Howard, J., Flaum, C., McKeon, D., Scott, H., Serra, O., Simmons, G., 1988, Mineral logging parameters--Nuclear and acoustic: *The Technical Review*, v. 36(1), p. 38-52. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 460-474.
- Fertl, W.H., and Chilingarian, G.V., 1981, Drilling through overpressured formations, chapter 16, *in* Chilingarian, G.V., and Vorabuth, P., editors, Drilling and drilling fluid: Elsevier Scientific Publishing Company, Amsterdam, Developments in Petroleum Science, No. 11, p. 581-620.
- Flaum, C., Holenka, J.M., and Case, C.R., 1989, Eliminating the effect of rugosity from compensated density logs by geometrical response modeling, SPE-19612, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 419-427. Later published in 1991: SPE Formation Evaluation, v. 6(2), p. 252-258.
- Gardner, J.S., and Dumanoir, J.L., 1980, Litho-Density Log interpretation, paper N, *in* 21st annual logging symposium transactions: Society of Professional Well Log Analysts, 12 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 397-419.
- Harvey, P.K., Bristow, J.F., and Lovell, M.A., 1990, Mineral transforms and downhole geochemical measurements: *Scientific Drilling*, v. 1(4), p. 163-176.
- Harvey, P.K., Lovell, M.A., and Bristow, J.F., 1991, The interpretation of geochemical logs from the oceanic basement; mineral modelling in Ocean Drilling Program (ODP) hole 735B: *Nuclear Geophysics*, v. 5(3), p. 267-277.
- Hastings, A.F., 1990, Log-derived elemental concentrations to improve the accuracy of fluid saturations determined from well logs: *Nuclear Geophysics*, v. 4(3), p. 305-319.

- Hertzog, R.C., and Herron, M.M., 1990, Applications of elemental measurements in geochemical logging, paper DD, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Jarrard, R.D., and Lyle, M., 1991, High-resolution geochemical variations at sites 723, 728, and 731—a comparison of X-ray fluorescence and geochemical logs, chapter 29, *in* Prell, W.L., Niituma, N., et al., editors, Proceedings of the Ocean Drilling Program, Scientific Results, v. 117: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 473-498.
- Jigeng, Q., Qingjiang, T., and Li, F., 1989, A minicomputer-based differential method of interpretation of gamma-ray logs by a modified deconvolution technique, Ward, S.H., editor, An overview of exploration geophysics in China—1988: Society of Exploration Geophysics, p. 409-444.
- Jordan, D.W., Slatt, R.M., Gillespie, R.H., D'Agostino, A.E., and Scheihing, M.H., 1991, Applications of outcrop gamma-ray logging to field development and exploration, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 104-122.
- Killeen, P.G., and Elliott, B.E., 1990, Model boreholes for gamma-ray logging: intercalibration of North American and European calibration facilities, paper GG, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 14 p.
- Kozhevnikov, D.A., and Khathmullin, I. Ph., 1990, A method of geometrical factors in the theory and interpretation of formation density logging: Nuclear Geophysics, v. 4(4), p. 413-424.
- Mills, W.R., Stromswold, D.C., and Allen, L.S., 1991, Die-away of epithermal neutron capture gamma-rays following a neutron pulse: Nuclear Geophysics, v. 5(1/2), p. 13-20.
- Mills, W.R., Stromswold, D.C., and Allen, L.S., 1991, Advances in nuclear oil well logging: Nuclear Geophysics, v. 5(3), p. 209-227.
- Moake, G.L., 1991, A new approach to determining compensated density and P_e values with a spectral-density tool, paper Z, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Moake, G.L., and Schultz, W.E., 1987, Improved density log lithology identification using a borehole-compensated photoelectric factor, paper FF, *in* 28th annual logging symposium transactions: Society of Professional Well Log Analysts, 22 p. Also published in 1987, *in* 11th formation evaluation symposium transactions, paper Q: Canadian Well Logging Society, 20 p. Also published in 1987, paper IPA-87-22/01, *in* 16th annual convention proceedings: Indonesian Petroleum Association, v. 2, p. 107-125. Later published in 1989 as SPE-17961, *in* SPE Middle East oil technical conference and exhibition [Manama, Bahrain], proceedings: Society of Petroleum Engineers, p. 337-355.
- Ølgaard, P.L., 1989, Nuclear log interpretation by first principle, *in* Imparasio, G., Frias, M., and Bemtgen, J.M., editors, Hydrocarbons, source of energy: Graham & Trotman, London, p. 134-143.
- Pages, G., Francisque, J.H., Flaum, C., Yver, J.P., 1990, The impact of utilizing the new CNL transforms and environmental corrections in evaluation of low-porosity dolomite formations, paper EE, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 16 p.
- Pelling, R., Harvey, P.K., Lovell, M.A., and Goldberg, D., 1991, Statistical analysis of geochemical logging tool data from hole 735B, Atlantis fracture zone, southwest Indian Ocean, chapter 15, *in* Von Herzen, R.P., Robinson, P.T., et al., editors, Proceedings of the Ocean Drilling Program, scientific results, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 271-283.
- Schimschal, U., 1991, A comparison of stationary and continuous gamma-ray spectral data with cores in granites: U.S. Geological Survey Open-File Report No. OF 91-0101, 22 p.

- Schweitzer, J.S., 1991, Nuclear techniques in the oil industry: Nuclear Geophysics, v. 5(1/2), p. 65-90
- Sun, M.Y., 1991, Radiotracer well logging in the petroleum industry in China: Nuclear Geophysics, v. 5(1/2), p. 109-115.
- Wyatt, D.F., Jr., 1991, Compensation for borehole effects and porosity determination with the Thermal Multigate Decay log, SPE-21661, in SPE production operations symposium proceedings: Society of Petroleum Engineers, p. 277-286.
- Zhao, J.Q., Liu, J.S., Ni, H.F., Liu, D., Wuru, G.S., Guo, T.C., Wu, Y., and Liu, J.L., 1991, Neutron capture gamma-ray spectral well logging using a ^{252}Cf -HPGe probe: Nuclear Geophysics, v. 5(1/2), p. 123-129.

VII. Shaly Sands

(See also II. Electric logging)

- Berger, P., and Crumb, R.E., 1990, An integrated approach for the evaluation of shaly-sands reservoirs, offshore northwest Java, OSEA-90190, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 375-384.
- Clavier, C., Coates, G., and Dumanoir, J., 1977, Theoretical and experimental bases for the dual-water model for interpretation of shaly sands, SPE-6859: Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint 16 p. Reprinted in 1982, in Shaly sand reprint volume: Society of Professional Well Log Analysts, p. V5-V20. Later published in 1984, Society of Petroleum Engineers Journal, v. 24(2), p. 153-169. Reprinted in 1986, in Openhole well logging: Society of Petroleum Engineers, SPE Reprint Series No. 21, p. 357-372. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG, Treatise of Petroleum Geology Reprint Series No. 17, p. 409-424.
- Coates, G.R., and Merrifield, T., 1990, A new approach to incorporating the SP in shaly-sand interpretation, paper P, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 15 p.
- Dawe, B.A., and Murdock, D.M., 1990, Laminated sands; an assessment of log interpretation accuracy by an oil-base mud coring program, SPE-20542, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 131-142.
- de Lima, O.A.L., and Sharma, M.M., 1990, A grain conductivity approach to shaly sandstones: Geophysics, v. 55(10), p. 1,347-1,356.
- Encheng, J., Yuheng, L., and Chongxuan, L., 1990, A correlation of irreducible-water saturation and permeability, paper D, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 19 p.
- Fertl, W.H., 1986, Log-derived evaluation of shaly clastic reservoirs, SPE-14061, in 1986 SPE international meeting on petroleum engineering [Beijing, March 17-20], proceedings: Society of Petroleum Engineers. Later published in 1987, Journal of Petroleum Technology, v. 39(2), p. 175-194. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 347-366.
- Fertl, W.H., and Chilingarian, G.V., 1990, Type and distribution modes of clay minerals from well logging data: Journal of Petroleum Science and Engineering, v. 3, p. 321-332.
- Givens, W.W., 1991, A dual-porosity, surface, and matrix electrical conduction model for low-contrast resistivity sandstone formations, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 27-51.

- Heslop, A., 1972, Gamma-ray log response of shaly sandstone: Canadian Well Logging Society Journal, v. 5(1), p. 29-37. Later published in 1974, paper M, in 15th annual logging symposium transactions: Society of Professional Well Log Analysts. Later published in 1974, The Log Analyst, v. 15(5), p. 16-21. Reprinted in 1982, in Shaly sand reprint volume: Society of Professional Well Log Analysts, p. II59-II69. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 324-329.
- Hsieh, F.S., and Vega, C.I., 1990, New porosity log equations for borehole containing variable shale volume, SPE-19396: Society of Petroleum Engineers, unsolicited paper, 23 p.
- Jain, P.K., 1990, Anomalous low resistivity Tipam sands of Assam India and their observed petrophysical aspects, OSEA-90192, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 1-18.
- Jing, X.D., and Archer, J.S., 1991, An improved Waxman-Smiths model for interpreting shaly sand conductivity at reservoir conditions, paper K, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Jing, X.D., Archer, J.S., and Daltaban, T.S., 1990, The use of synthetic shaly samples for the study of rock electrical properties at reservoir conditions, paper, Z, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 24 p.
- LaTorraca, G.A., and Hall, C.G., 1991, Observations of rock fabric controls on the electrical properties of sandstones, SCA-9116, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Lishman, J., 1988, A method of treating clay correction in mixed mineral calculations: Canadian Well Logging Society Journal, v. 16, no. 1, p. 83-109.
- Myers, M.T., 1991, A saturation interpretation model for the dielectric constant of shaly sands, SCA-9118, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Pallatt, N., and Thornley, D., 1990, The role of bound water and capillary water in the evaluation of porosity in reservoir rocks, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 223-237.
- Raines, M.G., Jackson, P.D., Evans, C.J., Meldrum, P., and Rainsbury, M., 1989, An evaluation of the resistivity anisotropy of the clays at the Down Ampney fault research site: British Geological Survey Technical Report WE/89/48, 32 p.
- Ruhovets, N., 1989, A log analysis technique for evaluating laminated reservoirs in the Gulf Coast area, paper C, in 12th formation evaluation symposium transactions: Canadian Well Logging Society, 23 p. Later published in 1990, The Log Analyst, v. 31(5), September-October, p. 294-303.
- Sen, P.N., 1991, Correspondence between membrane potential and conductivity: Geophysics, v. 56(4), p. 461-471.
- Tenchov, G.G., and Dimitrova, L.V., 1991, Evaluation of the diffusion-adsorption potentials in shaly sands using the dual-water model: Journal of Petroleum Science and Engineering, v. 5(2), February, p. 195-200.
- Thomas, E.C., and Steiber, S.J., 1975, The distribution of shale in sandstones and its effect upon porosity, paper T, in 16th annual logging symposium transaction: Society of Professional Well Log Analysts, 15 p. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 331-345.

- Waxman, M.H., and Smits, L.J.M., 1967, Electrical conductivities in oil-bearing shaly sands, SPE-1863-A: Society of Petroleum Engineers, 42nd annual meeting [Houston] preprint, 16 p. Later published in 1968, Society of Petroleum Engineers Journal, v. 8(2), p. 107-122. Reprinted 1971, in Well Logging: Society of Petroleum Engineers, Reprint Series No. 1, p. 101-116. Reprinted 1982, in Shaly sand: Society of Professional Well Log Analysts, Reprint v., p. V145-V160. Reprinted 1986, in Openhole well logging: Society of Petroleum Engineers, SPE Reprint Series No. 21, p. 315-330. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 367-382.
- Worthington, P.F., 1985, The evolution of shaly-sand concepts in reservoir evaluation: The Log Analyst, v. 26(1), p. 23-40. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 425-442.
- Worthington, P.F., and Johnson, P.W., 1987, Quantitative evaluation of hydrocarbon saturation in shaly freshwater reservoirs, paper IPA 87-22/06, in 16th annual convention proceedings: Indonesian Petroleum Association, Jakarta, v. 2, p. 127-152. Later published in 1991: The Log Analyst, v. 32(4), p. 358-370.
- Yuan, H.H., 1991, Salinity dependence of shaly sand parameters for membrane potential measurements, SCA-9115, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 26 p.
- Yuecai, W., 1990, Improvement on the interpretation method of shaly sand with perfect Q_v , paper A, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 21 p.

VIII. Borehole Gravimetry

- LaCoste, L., 1991, A new calibration method for gravity meters: Geophysics, v. 56(5), p. 701-704.
- Popta, J.V., Heywood, J.M.T., Adams, S.J., and Bostock, D.R., 1990, Use of borehole gravimetry for reservoir characterization and fluid saturation monitoring, SPE-20896, in Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 151-160.
- ResTech Houston, 1988, Borehole gravity and gradiometry, workshop proceedings: Gas Research Institute Report No. GRI-88195, variously paginated
- Vallianat, H.D., 1991, Gravity meter calibration at LaCoste and Romberg: Geophysics, v. 56(5), p. 705-711.
- Zumberge, M.A., Ander, M.E., Lautzenhiser, T.V., Parker, R.L., Aiken, L.V., Gorman, M.R., and others, 1990, The Greenland gravitational constant experiment: Journal of Geophysical Research, v. 95(b10), p. 15,483-15,501.

IX. Permeability Determination From Logs

(See also V. Acoustic logging; VII. Shaly sands; 15. Fracture detection)

- Ahmed, U., Crary, S.F., and Coates, G.R., 1989, Permeability estimation; the various sources and their interrelationship, SPE-19604, in SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 649-662. Later published in 1990 as, The interrelationship between various permeability measurements, paper I, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 21 p. Later published in 1991: Journal of Petroleum Technology, v. 43(5), p. 578-587.
- Burns, D.R., 1990, Acoustic-waveform logs and the in-situ measurement of permeability—a review, in Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 65-78.
- Burns, D.R., 1991, Predicting relative and absolute variations of in-situ permeability from full-waveform acoustic logs: The Log Analyst, v. 32(3), p. 246-255.

- Davis, E.E., Horel, G.C., MacDonald, R.D., Villinger, H., Bennett, R.H., and Li, H., 1991, Pore pressures and permeabilities measured in marine sediments with a tethered probe: *Journal of Geophysical Research*, v. 96(B4), April 10, p. 5975-5984.
- Desbrandes, R., 1990, Interpretation of MWD dual-resistivity measurements--permeability estimate, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 147-157.
- Dominguez, H., and Perez, G., 1991, Permeability estimation in naturally fractured fields by analysis of Stoneley waves: *The Log Analyst*, v. 32(3), p. 120-128.
- Goode, P.A., and Thambynayagam, R.K.M., 1990, Analytic models for a multiple probe formation tester, SPE-20737, *in* SPE annual technical conference and exhibition, proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 211-224.
- Hatzignatiou, D.G., and Reynolds, A.C., 1990, Determination of effective or relative permeability curves from well tests, SPE-20537, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 89-100.
- Iverson, W.P., 1990, Permeability estimation from sonic versus porosity gradients, BG5.2, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 106-109.
- Kittridge, M.G., Lake, L.W., Lucia, F.J., and Fogg, G.E., 1989, Outcrop/subsurface comparisons of heterogeneity in the San Andres Formation, SPE-19596, *in* SPE annual technical conference and exhibition, proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 259-273. Later published in 1990, SPE Formation Evaluation, v. 5(3), p. 233-240.
- Nicolaysen, R., and Svendsen, T., 1991, Estimating the permeability for the Troll field using statistical methods querying a fieldwide database, paper QQ, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 13 p.
- Paillet, F.L., 1991, Qualitative and quantitative interpretation of fracture permeability using acoustic full-waveform logs: *The Log Analyst*, v. 32(3), p. 256-270.
- ResTech Houston, 1988, Continuous downhole permeability measurements, workshop proceedings: Gas Research Institute Report No. GRI-88/213, variously paginated.
- Straley, C., Morriss, C.E., Kenyon, W.E., and Howard, J.J., 1991, NMR in partially saturated rocks: laboratory insights on free fluid index and comparison with borehole logs, paper CC, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Tobola, D.P., and Holditch, S.A., 1989, Determination of reservoir permeability from repeated induction logging, SPE-19606, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 355-370. Later published in 1991: SPE Formation Evaluation, v. 6(1), p. 20-26.
- Yuan, L.-P., 1990, Pore image characterization and its relationship to permeability, paper SCA-9002, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 18 p.

X. Borehole Imaging and Applications (Including BHTV, FMS, and Radar)

(See also II. Electric logging; V. Acoustic logging; 6. Dipmeter applications;
15. Fracture detection)

- Antoine, J.N., and Delhomme, J.P., 1990, A method to derive dips from bed boundaries in borehole images, SPE-20540, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 121-130.

- Badr, A.R., and Ayoub, M.R., 1989, Study of a complex carbonate reservoir using the Formation MicroScanner (FMS), SPE-17977, in SPE Middle East oil technical conference and exhibition proceedings: Society of Petroleum Engineers, p. 507-516. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 345-354.
- Barton, C.A., and Moos, D., 1988, Analysis of macroscopic fractures in the Cajon Pass scientific drillhole; over the interval 1,829-2,115 meters: Geophysical Research Letters, v. 15(9), p. 1,013-1,016. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 287-290.
- Barton, C.A., Zoback, M.D., and Burns, K.L., 1988, In-situ stress orientation and magnitude at the Fenton geothermal site, New Mexico, determination from wellbore breakouts: Geophysical Research Letters, v. 15(5), p. 467-470. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 439-442.
- Beydoun, W.B., 1990, Reservoir characterization from crosshole seismic--new directions, in Buller, A.T., Berg, E., et al., editors, North Sea oil and gas reservoirs II: Graham & Trotman, London, p. 116-124.
- Bourke, L.T., 1989, Recognizing artifact images of the Formation Microscanner, paper WW, in 30th annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 191-215.
- Bourke, L., Delfiner, P., Trouiller, J.-C., Fett, T., Grace, M., Luthi, S., Serra, O., and Standen, E., 1989, Using Formation Microscanner images: The Technical Review, v. 37(1), January, p. 16-40. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 610-634.
- Bouroz, C., Angelier, J., and Bergerat, F., 1990, Sancerre-Couy drilling project--a comparison between FMS images and cores: Bulletin de la Société Géologique de France, v. 6(5), p. 779-787.
- Boyeldieu, C., and Jeffreys, P., 1988, Formation Microscanner--new developments, paper WW, in 11th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, 16 p. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 175-190.
- Broding, R.A., 1982, Volumetric scan well logging: The Log Analyst, v. 23(1), p. 14-19. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 93-97.
- Buczak, J.M.J., 1989, FMS, dipmeter, and petrophysics, paper 10, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 25 p.
- Dennis, B., Standen, E., Georgi, D.T., and Callow, G.O., 1987, Fracture identification and productivity predictions in a carbonate reef complex, SPE-16808, in SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 579-588. A similar version also published in 1987 as, Fracture identification techniques in carbonates, paper Y, in 11th formation evaluation symposium transactions: Canadian Well Logging Society, 27 p. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 277-286.
- Draxler, J.K., Lingnau, R., and Wöhr, T., 1990, Formation Microscanner application in crystalline rocks, paper KK, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Ekstrom, M.P., Dahan, C.A., Chen, M., Lloyd, P.M., and Rossi, D.J., 1986, Formation imaging with microelectrical scanning arrays, paper BB, in 27th annual logging symposium transactions: Society of Professional Well Log Analysts, 21 p. Later published in 1987, The Log Analyst, v. 28(3), May-June, p. 294-306. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 163-174.

- Faraguna, J., Chace, D.M., and Schmidt, M.G., 1989, An improved borehole televiewer system—image acquisition, analysis, and integration, paper UU, *in* 30th annual logging symposium transactions: Society of Professional Well Log Analysts, 11 p. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 149-159.
- Georgi, D.T., 1985, Geometrical aspects of borehole televiewer images, paper C, *in* 27th annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 129-147.
- Glowka, D.A., Loeppke, G.E., Lysne, P.C., and Wright, E.K., 1990, Evaluation of a potential borehole televiewer technique for characterizing lost circulation zones: Geothermal Resources Council Transactions, v. 14, part 1, p. 395-402.
- Goetz, J.F., Seiler, D.D., and Edmiston, C.S., 1990, Geological and borehole features described by the Circumferential Acoustic Scanning Tool, paper Z, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p. Also published in 1990, as paper OSEA-90113, *in* 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 1-18.
- Goetz, J.F., Seiler, D.D., and Edmiston, C.S., 1991, Fracture description in the Austin Chalk using CAST images, *in* Chuber, S., editor, Austin Chalk exploration symposium, geology, geophysics, and formation evaluation, abstracts and short papers: South Texas Geological Society, p. 51-63.
- Greaves, R.J., Beydoun, W.B., and Spies, B.R., 1991, New dimensions in geophysics for reservoir monitoring, SPE-20170: SPE Formation Evaluation, v. 6(2), p. 141-150.
- Hackbarth, C.J., and Tepper, B.J., 1988, Examination of BHTV, FMS, and SHDT images in very thinly bedded sands and shales, SPE-18118, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 119-127. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 307-315.
- Hawkins, W.L., Oliver, R.D., and Lavelle, M.J., 1989, Borehole inspection system for large diameter holes: The Log Analyst, v. 30(1), p. 26-30. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 47-51.
- Hickman, S.H., Healy, J.H., and Zoback M.D., 1985, In situ stress, natural fracture distribution, and borehole elongation in the Auburn geothermal well, Auburn, New York: Journal of Geophysical Research, v. 90(B7), p. 5,497-5,512. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 371-386.
- Hunka, J.F., Barber, T.D., Rosthal, R.A., Minerbo, G.N., Head, E.A., Howard, A.Q., Jr., Hazen, G.A., and Chandler, R.N., 1990, A new resistivity measurement system for deep formation imaging and high-resolution formation evaluation, SPE-20559, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 295-307.
- Justice, J.H., Mathisen, M.E., Vassiliou, A.A., Singh, Cunningham, P.S., and Bulau, J.R., 1991, Acoustic tomography for reservoir surveillance, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 159-170.
- Kamewada, S., Gi, H.S., Taniguchi, S., and Yoneda, H., 1990, Application of borehole image processing system to survey for tunnels, *in* Barton, N., and Stephansson, O., editors, Rock joints [international symposium on rock joints, June 4-6, 1990, Loen Norway, proceedings]: A.A. Balkema, Rotterdam, The Netherlands, p. 51-58.
- Katahara, K.W., Kyle, D.G., Siegfried, R.W., Gard, M.F., Goodwill, W.P., Schasteen, T., and Petermann, S.G., 1988, Detection of external pipe defects with a modified borehole televiewer, paper UU, *in* 29th annual logging symposium transactions: Society of Professional Well Log Analysts, 20 p. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 251-263.

- Kirchoff-Stein, K.S., Silver, E.A., Moos, D., Barton, C.A., Jarrard, R., 1991, Results of borehole televiewer observations in the Celebes and Sulu Seas, chapter 8, *in* Silver, E.A., Rangin, C., von Breymann, M.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 124: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 105-118.
- Lau, J.S.O., Auger, L.F., and Bisson, J.G., 1987, Subsurface fracture surveys using a borehole television camera and acoustic televiewer: *Canadian Geotechnical Journal*, v. 24(4), p. 499-508. Later reprinted in 1990, *in* *Borehole Imaging reprint volume: Society of Professional Well Log Analysts*, p. 37-46.
- Laubach, S.E., Baumgardner, R.W., Jr., Monson, E.R., Hunt, E., and Meador, K.J., 1988, Fracture detection in low-permeability reservoir sandstone—a comparison of BHTV and FMS logs to core, SPE-18119, *in* SPE annual technical conference and exhibition proceedings, v. omega, *Formation evaluation and reservoir geology: Society of Petroleum Engineers*, p. 129-139. Later reprinted in 1990, *in* *Borehole Imaging reprint volume: Society of Professional Well Log Analysts*, p. 265-275.
- Lawson, D.A., 1991, Interwell geology from geophysical data, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., *Reservoir characterization II: Academic Press, Inc., San Diego, California*, p. 442-459.
- Lovell, M., Pezard, P., Harvey, P., 1990, Ultrasonic borehole images of the subsurface crust: *Geology Today*, v. 6(5), p. 154-156.
- Luthi, S.M., and Banavar, J.R., 1988, Application of borehole images to three-dimensional geometric modeling of eolian sandstone reservoirs, Permian Rotliegende, North Sea: *AAPG Bulletin*, v. 72(9), p. 1,074-1,089. Later reprinted in 1990, *in* *Borehole Imaging reprint volume: Society of Professional Well Log Analysts*, p. 317-332.
- Luthi, S.M., and Souhaite, P., 1990, Fracture aperatures from electrical borehole scans: *Geophysics*, v. 55(7), p. 821-833.
- Lysne, P., 1986, Determination of borehole shape by inversion of televiewer data: *The Log Analyst*, v. 27(3), p. 64-71. Later reprinted in 1990, *in* *Borehole Imaging reprint volume: Society of Professional Well Log Analysts*, p. 419-426.
- McDougall, J.G., and Howard, M.G., 1989, Advances in borehole imaging with second-generation CBIL [circumferential borehole imaging log] borehole televiewer instrumentation, paper 12, *in* 28th annual conference proceedings: Ontario Petroleum Institute Inc., Lambeth, Ontario, Canada, 14 p.
- Moss, R.M., and Russo, J.W., 1991, Quantitative determination of secondary porosity using X-ray computed tomography and wireline logs, paper J, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Noblett, B.R., and Howard, L.P., 1991, Using the Circumferential Borehole Imaging Log to identify and orient vertical fractures in the Austin Chalk, *in* Chuber, S., editor, *Austin Chalk exploration symposium, geology, geophysics, and formation evaluation, abstracts and short papers: South Texas Geological Society*, p. 105-109.
- Olsson, O., and Falk, L., 1989, Borehole radar—a new technique for characterization of rock at great depth, *in* Maury, V., and Fourmaintraux, D., editors, *Rock at great depth [international symposium on rock mechanics, proceedings]*, v. 3: A.A. Balkema, Rotterdam, The Netherlands, p. 1229-1234.
- Paillet, F.L., and Goldberg, D., 1991, Acoustic televiewer log images of natural fractures and bedding planes in the Toa Baja borehole, Puerto Rico: *Geophysical Research Letters*, v. 18(3), p. 501-504.
- Paillet, F.L., Keys, W.S., and Hess, A.E., 1985, Effects of lithology on televiewer-log quality and fracture interpretation, paper JJJ, *in* 27th annual logging symposium transactions: Society of Professional Well Log Analysts, 30 p. Later reprinted in 1990, *in* *Borehole Imaging reprint volume: Society of Professional Well Log Analysts*, p. 99-128.

- Paillet, F.L., and Kim, K., 1985, The character and distribution of borehole breakouts and their relationship to in situ stresses in deep Columbia River basalts: Rockwell Hanford, Richland, Washington, Operations Report RHO-BW-CR-155, December, 27 p. Later published in 1987, *Journal of Geophysical Research*, v. 92(B7), p. 6,223-6,234. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 387-398.
- Palmer, I.D., and Sparks, D.P., 1990, Measurement of induced fractures by downhole television camera in coalbeds of the Black Warrior basin, SPE-20660, *in* SPE annual technical conference and exhibition proceedings, v. pi, Production operations and engineering: Society of Petroleum Engineers, p. 459-472. Later published in 1991: *Journal of Petroleum Technology*, v. 43(3), p. 270-275, 326-328.
- Pasternack, E.S., and Goodwill, W.P., 1983, Applications of digital borehole televiewer logging, paper X, *in* 24th annual logging symposium transactions: Society of Professional Well Log Analysts, 12 p. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 427-438.
- Paulsson, B.N.P., 1991, Cross-well seismology—A tool for reservoir geophysics, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 460-476.
- Pezard, P., and Lovell, M., 1990, Downhole images; electrical scanning reveals the nature of subsurface oceanic crust: *Eos Transactions*, v. 71(20), May 15, p. 709, 718.
- Plumb, R.A., and Hickman, S.H., 1985, Stress-induced borehole elongation—a comparison between the four-arm dipmeter and the borehole televiewer in the Auburn geothermal well: *Journal of Geophysical Research*, v. 90(B7), p. 5,513-5,521. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 407-415.
- Plumb, R.A., and Luthi, S.M., 1986, Application of borehole images to geologic modeling of an eolian reservoir, SPE-15487: Society of Petroleum Engineers presented at SPE annual technical conference and exhibition, preprint, 11 p. Later published in 1989, *SPE Formation Evaluation*, v. 3(4), p. 505-514. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 333-343.
- Quint, E.N.M., 1990, Improving lateral and vertical resolution in geotomography, SPE-20944, *in* Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 2, p. 79-86.
- Rambow, F.H.K., 1984, The borehole televiewer—some field examples, paper C, *in* 25th annual logging symposium transactions: Society of Professional Well Log Analysts, 21 p. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 71-91.
- Rübel, H.J., Schepers, R., and Schmitz, D., 1986, High resolution televiewer logs from sedimentary formations, paper GG, *in* 10th European Formation Evaluation Symposium transactions: Society of Professional Well Log Analysts, Aberdeen Chapter, 15 p. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 291-305.
- Saito, H., Shima, H., Toshioka, T., Kaino, S-I., and Ohtomo, H., 1990, A case study of geotomography applied to a detailed investigation of a highway bridge foundation, *in* Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 37-46.
- Standen, E., 1991, Tips for analyzing fractures on electrical wellbore images: *World Oil*, v. 212(4), April, p. 99-117.
- Stock, J.M., Healy, J.H., Hickman, S.H., and Zoback, M.D., 1985, Hydraulic fracturing stress measurements at Yucca Mountain, Nevada and relationship to the regional stress field: *Journal of Geophysical Research*, v. 90(B10), September 10, p. 8,691-8,706. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 355-370.

- Straub, A., Gros, Y., and Krückel, U., 1990, Structural description by electrical imaging of a borehole in granite, paper LL, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Taylor, T.J., 1983, Interpretation and application of borehole televiewer surveys, paper QQ, in 24th annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 591-609.
- Taylor, T.J., 1991, A method for identifying fault related fracture systems using the borehole televiewer, paper JJ, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p.
- Torres, D., Strickland, R., and Gianzero, M., 1990, A new approach to determining dip and strike using images, paper JJ, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 16 p.
- Trouiller, J-C., Delhomme, J-P., Carline, S., and Anxionnaz, H., 1989, Thin-bed reservoir analysis from borehole electrical images, SPE-19578, in SPE Annual Technical Conference and Exhibition Proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 61-72. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 217-228.
- Verdur, H., Stinco, L., and Naidas, C., 1991, Sedimentological analysis utilizing the circumferential borehole acoustic image, paper II, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p.
- Wolfsburger, R.T., Welychka, E.P., and Standen, E.J.W., 1988, Formation MicroScanner applications in southwestern Ontario, in 27th annual conference transactions: Ontario Petroleum Institute, London, Ontario, Canada, p. 22 p. Later published in 1990 as, Formation MicroScanner applications in the study of subsurface Paleozoic carbonate rocks; southwestern Ontario, Canada: Carbonates and Evaporites, v. 5(2), p. 123-140.
- Wong, S.A., 1989, Automatic feature detection from wellbore images: Texas A&M University, unpublished Ph.D. dissertation, 190 p.
- Wong, S.A., Startzman, R.A., and Kuo, T-B., 1989, Enhancing borehole image data on a high-resolution PC, SPE-19124, in SPE petroleum computer conference proceedings: Society of Petroleum Engineers, p. 37-48. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 443-455.
- Zemanek, J., Glenn, E.E., Norton, L.J., and Caldwell, R.L., 1970, Formation evaluation by inspection with the borehole televiewer: Geophysics, v. 35, p. 254-269. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 55-70.
- Zoback, M.D., Moos, D., Mastin, L., and Anderson, R.N., 1985, Well bore breakouts and in situ stress: Journal of Geophysical Research, v. 90(B7), p. 5,523-5,530. Discussion and reply in 1986, Journal of Geophysical Research, v. 91(B14), p. 14,161-14,164. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 399-406.

XI. Temperature Logging, Determination of Static BHT; Applications of BHT Data; Heat-flow and Geothermics (See also 21. Geothermal logging)

- Anderson, R.N., 1990, Method of locating oil and gas horizons using a wellbore heat flow log: U.S. Patent 4,947,682, 9 p.
- Balling, N., Nielsen, S.B., van Rooy, D., and Saxov, S., 1984, The subsurface temperature field in Denmark; measuring and modelling results, in 3rd international seminar on energy, European geothermal update: Commission of the European Communities, Report EUR-8853, p. 95-103.
- Ben Dhia, H., 1991, Thermal regime and hydrodynamics in Tunisia and Algeria: Geophysics, v. 56(7), p. 1093-1102

- Brigaud, F., Chapman, D.S., and Le Douaran, S., 1990, Estimating thermal conductivity in sedimentary basins using lithologic data and geophysical well logs: AAPG Bulletin, v. 74(9), p. 1,459-1,477.
- Brock, A., and Barton, K.J., 1984, Equilibrium temperature and heat flow density measurements in Ireland, *in* 3rd international seminar on energy, European geothermal update: Commission of the European Communities, Report EUR-8853, p. 425-429.
- Correia, A., Jones, F.W., and Fricker, A., 1990, Terrestrial heat-flow density estimates for the Jeanne D'Arc Basin, offshore eastern Canada: Geophysics, v. 55 (12), p. 1625-1633.
- Demongodin, L., Vasseur, G., Pinoteau, B., and Gable, R., 1991, Thermal conductivity and well logs; a case study in the Paris Basin: Geophysical Journal International, v. 105(3), June, p. 675-691.
- Dowdle, W.L., and Cobb, W.M., 1974, Static formation temperature from well logs—an empirical method, SPE-5036: Society of Petroleum Engineers, 49th annual meeting [Houston] preprint. Later published in 1975: Journal of Petroleum Technology, v. 27(11), p. 1326-1330. Reprinted in 1982, Geothermal log interpretation handbook: Society of Professional Well Log Analysts, p. V-61-V-65. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 514-518.
- Edwardson, M.J., Girner, H.M., Parkinson, H.R., Williams, C.D., and Mathews, C.S., 1962, Calculation of formation temperature disturbances caused by mud circulation: Journal of Petroleum Technology, v. 14(4), p. 416-426. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 544-554.
- Fertl, W.H., 1978, How subsurface temperature affects formation evaluation: Oil and Gas Journal, v. 76(30), July 24, p. 54-62. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 508-512.
- Fertl, W.H., 1985, Logs help approximate reservoir temperature: Oil and Gas Journal, v. 83(17), April 29, p. 89-95. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 519-521.
- Fialka, B.N., Pyszka, M.H., and Chhina, H.S., 1990, the evaluation of temperature logging in thermal application, SPE-20084, *in* SPE California regional meeting proceedings: Society of Petroleum Engineers, p. 571-580.
- Haack, U., Gohn, E., Bucker, C., and Zoth, G., 1990, Radiogenic heat production measured by laboratory and borehole methods—a comparison: Scientific Drilling, v. 1(5), p. 211-216.
- Harrison, W.D., 1991, Permafrost response to surface temperature change and its implications for the 40,000-year surface temperature history at Prudhoe Bay: Journal of Geophysical Research, v. 96(B1), January 10, p. 683-695.
- Hermanrud, C., Cao, S., and Lerche, I., 1990, Estimates of virgin rock temperature derived from BHT (bottom-hole temperature) measurements—bias and error: Geophysics, v. 55(7), p. 924-931.
- Hermanrud, C., Meisingset, K.K., and Lerche, I., 1989, Formation temperatures from drillstem tests, SPE-19464: Society of Petroleum Engineers, unsolicited paper, 59 p. Later published in 1991, as Determination of virgin rock temperature from drillstem tests: Journal of Petroleum Technology, v. 43(9), p. 1126-1131.
- Kritikos, W.P., and Kutasov, I.M., 1988, Two-point method for determination of undisturbed reservoir temperature, SPE-15204: SPE Formation Evaluation, v. 3(1), p. 222-226.
- Langseth, M.G., 1990, Cooling of deep sea boreholes by circulation and implications for logging techniques in high temperature holes: Scientific Drilling, v. 1(5), p. 231-237.

- Langseth, M.G., Lachenbruch, A.H., and Marshall, B.V., 1990, Geothermal observations in the Arctic region, in Grantz, A., Johnson, L. and Sweeney, J.F., editors, The Arctic Ocean region: The Geological Society of America, The Geology of North America v. L, p. 133-151.
- Lerche, I., 1990, Formation temperature and heat flux estimates, chapter 3, in Basin analysis, quantitative methods, v. 2: Academic Press, inc., New York, p. 60-96.
- Nielsen, S.B., Balling, N., and Christiansen, H.S., 1990, Formation temperatures determined from stochastic inversion of borehole observations: Geophysical Journal International, v. 101(3), p. 581-590.
- Nobes, D.C., Mienert, J., Mwenifumbo, C.J., and Blangy, J.P., 1991, An estimate of heat flow on the Meteor Rise, site 704, chapter 3, in Ciesielski, P.F., Kristoffersen, Y., et al., editors, Proceedings of the Ocean Drilling Program, Scientific Results, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 39-45. Also published in 1991, An estimate of the heat flow on the Meteor Rise, subantarctic South Atlantic: Journal of Geophysical Research, v. 96(B4), April 10, p. 5947-5953.
- Seto, A.C., and Bharatha, S., 1991, Thermal conductivity estimation from temperature logs, SPE-21542, in SPE International thermal operations symposium proceedings: Society of Petroleum Engineers, p. 179-186.
- Sillman, S.E., and Neuzil, C.E., 1990, Borehole determination of formation thermal conductivity using a thermal pulse from injected fluid: Journal of Geophysical Research, v. 95(B6), June 10, p. 8697-8704
- Swift, A.E., Swift, T.E., and Aucoin, L.A., 1990, Advanced thermal technology—An exploration lead tool: Petroleum Review, v. 44 (525), October, p. 528-530.
- Taylor, A.E., 1991, Marine transgression, shoreline emergence; evidence in seabed and terrestrial ground temperatures of changing relative sea levels, Arctic Canada: Journal of Geophysical Research, v. 96(B4), April 10, p. 6893-6909.
- Wilhelm, H., 1990, A new approach to the borehole temperature relaxation method: Geophysical Journal International, v. 103(2), p. 469-481.
- Williams, C.F., and Anderson, R.N., 1990, Thermophysical properties of the earth's crust--In situ measurements from continental and ocean drilling: Journal of Geophysical Research, v. 95(B6), June 10, p. 9189-9207.
- Xu, H., and Desbrandes, R., 1991, Formation evaluation using in-situ measurements of formation thermal properties: The Log Analyst, v. 32(3), p. 144-157.

XII. Conditions and Special Situations Affecting Tool Response

- Allen, D.F., Best, D.L., Evans, M., and Holenka, J., 1990, The effect of wellbore condition on wireline and MWD neutron-density logs, SPE-20563, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 345-356.
- Chemali, R., Gianzero, S., and Su, S.M., 1988, The dual laterolog in common complex situations, paper N, in 29th annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p. Also published in 1988 as paper U, in 11th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Norwegian Chapter, 25 p.
- Dunn, K.J., Guo, D.S., and Zalman, T.A., 1991, Gas/steam saturation effect on pulsed neutron capture count rates, paper NN, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Wang, Z., and Nur, A., 1986, Effect of temperature on wave velocities in sands and sandstones with hydrocarbons, SPE-15645: Society of Petroleum Engineers, 61st annual meeting [New Orleans] preprint, 8 p. Also published in 1986, in Expanded abstracts with biographies, 1986 technical program [Houston]: Society of Economic Geophysicists, p. 3-5. Later published in 1988, SPE Reservoir engineering, v. 3(1), p. 158-164. Later reprinted in 1989, in Nur, A.M., and Wang, Z., editors, Seismic and acoustic velocities in reservoir rocks, v. 1, experimental studies: Society of Exploration Geophysicists Reprint Series No. 10, p. 188-194.

XIII. Crossplot Techniques and Applications

- Aguilera, R., 1990, Extensions of Pickett plots for the analysis of shaly formations by well logs: *The Log Analyst*, v. 31, n. 5, September-October, p. 304-309.
- Mathews, D.M., and Bassiouni, Z., 1984, Resistivity-spontaneous potential crossplot for enhanced interpretation of well logs: *The Log Analyst*, v. 25(4), p. 14-19. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16*, p. 264-269.
- Matyas, V., 1990, Kuskal technique of formation identification from well logs, paper T, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 13 p.
- Sharma, B., and Jackson, S., 1991, A crossplot technique for discrimination of various sandstone facies in barrier island sandstone deposits, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., *Reservoir characterization II*: Academic Press, Inc., San Diego, California, p. 689-694.

XIV. Computer and Programmable Calculator Programs for Log Analysis

- Cooper, W.G., Kimminau, S., Makin, J., Servadei, F., Stonard, S., and Whattler, P., 1989, Log analysis software review and directory: Society of Professional Well Log Analysts, London Chapter, prepared for 1989 Log analysis software evaluation and review symposium, 15 p. + appendices and tables
- Elphick, R.Y., 1990, Petrophysical software directory '90: *Geobyte*, v. 5(4), August/September, p. 18-30.
- Elphick, R.Y., 1990, Five minerals plus porosity from three curves: *Geobyte*, v. 5(5), October/November, p. 63-69.
- Elphick, R.Y., 1991, Determining geopressures from resistivity logs: *Geobyte*, v. 6(3), April, p. 48-58.
- Elphick, R.Y., 1991, Petrophysical software directory: *Geobyte*, v. 6(4), August/September, p. 20-30.
- Goodwin, N.H., 1989, The potential application of modern databases to petrophysical software, paper 17, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 22 p.
- Lomas, A.T., 1989, An opportunity for change, paper 5, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 9 p.
- May, A., 1991, Electromagnetic propagation log interpretation on the computer: *Geobyte*, v. 6(3), p. 33-44.
- Shields, T., 1991, Updated program calculates pore pressure, frac gradients: *World Oil*, v. 212(4), p. 41-44.
- Thomas, M.D., 1989, Selection of log-analysis software—methodology and criteria, paper 4, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 22 p.
- van Baaren, J.P., and Heijnen, W.H.P.M., 1989, The development of an interactive petrophysical evaluation system for MS-DOS personal computers, paper 3, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 14 p.

XV. Schlumberger International Well Evaluation Conferences

None

XVI. Reprint Volumes

- Schlumberger, 1974, Reprints of articles from the Technical Review, 1958-1973: Schlumberger EPS Production Engineering, Paris, 2 volumes, 944 p.

Schlumberger, 1982, Reprints of articles from the Technical Review, 1974-1981: Schlumberger ATL-Technique, Paris, Document No. M-072585, 2 volumes, 640 p.

XVII. Bibliographies

Prensky, S.E., 1990, Bibliography of well-log applications, annual update, October 1, 1989--September 1, 1990: The Log Analyst, v. 31, no. 6, p. 395-424.

Prensky, S.E., 1990, Bibliography of well-log applications, cumulative edition (through 1 September 1990): U.S. Geological Survey Open-File Report 90-637A, 362 p. (microfiche); OF 90-637B, 3 Macintosh-compatible diskettes in Microsoft Word v4.0; OF 90-637C, 2 IBM-PC-compatible diskettes in WordPerfect v5.0. [Contains over 2,700 individual entries.] Also published in 1990, in part, as Appendix II, in Ocean Drilling Program wireline logging manual, 2nd edition: Columbia University, Lamont-Doherty Geological Observatory, Borehole Research Group, New York, 205 p.

XVIII. Well-Log-Response Charts

None

Part B: APPLICATIONS

2. GENERAL GEOLOGICAL AND GEOTECHNICAL APPLICATIONS

- Anderson, R.N., 1990, Geochemistry and geophysics of the Moodus, Connecticut, drillhole from well logs, and the fluid flux associated with movement along low-angle thrust faults: *Scientific Drilling*, v. 1(5), p. 238-252.
- Anderson, R.N., 1991, Geophysical logs from the Toa Baja scientific drillhole, Puerto Rico: *Geophysical Research Letters*, v. 18(3), p. 497-500.
- Armentrout, J.M., 1990, Research conference overview, *in* Sequence stratigraphy as an exploration tool; concepts and practices in the Gulf Coast [11th annual research conference, Gulf Coast Section, December 2-5]: Society for Sedimentary Geology (SEPM), Tulsa, OK, p. 1-10.
- Bakke, S., and Griffiths, C.M., 1989, Interactive quantitative matching of stratigraphic sequences of numerical lithostates based on gene-typing techniques, chapter 7, *in* Collinson, J.D., editor, *Correlation in hydrocarbon exploration* [Correlation in Hydrocarbon Exploration (Bergen, Norway, October 3-5, 1988), proceedings]: Graham & Totman, London, p. 61-76.
- Becker, K., 1990, Introduction to special section on logging and downhole measurements in Deep Sea Drilling Project/Ocean Drilling Program deep crustal holes: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9149-9151.
- Bensen, A.K., 1991, Application of shear, compressional, and V_s/V_p data to evaluate subsurface geology and associated conditions and hazards, *in* 27th symposium on engineering geology and geotechnical engineering [April 10-12, Logan, Utah], proceedings: Utah State University, Logan, Utah, p. 39-1--39-18.
- Blaha, P., and Valtr, V., 1990, Borehole logging in investigations of slope deformation, *in* Price, D.G., editor, 6th international congress International Association of Engineering Geology, proceedings: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 2099-2105.
- Bochicchio, R.M., 1990, Borehole induction logging to complement the mapping of an electrically conductive plume, *in* Zapaorozec, A., editor, *Minimizing risk to the hydrologic environment* [American Institute of Hydrology conference, March 13-15, Las Vegas, NV]: Kendall/Hunt Publishing Company, Dubuque, IA, p. 210-218.
- Borehole Research Group, 1988, Perspectives on scientific logging from the Ocean Drilling Program, v. 5, *in* Ocean Drilling Program wireline logging manual: Lamont-Doherty Geological Observatory, Columbia University, variously paginated.
- Borehole Research Group, 1990, Ocean Drilling Program wireline logging manual, 2nd edition: Lamont-Doherty Geological Observatory, Columbia University, 6 v.s + appendix, variously paginated.
- Bouroz, C., Angelier, J., and Bergerat, F., 1990, Sancerre-Couy drilling project--a comparison between FMS images and cores: *Bulletin de la Société Géologique de France*, v. 6(5), p. 779-787.
- Carlson, R.L., and Herrick, C.N., 1990, Densities and porosities in the oceanic crust and their variations with depth and age: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9153-9170.
- Carroll, J.F., Scott, H.D., Gunn, R.A., and O'Brien, M.S., 1990, Naturally occurring radioactive material logging, SPE-20616, *in* SPE annual technical conference and exhibition, proceedings, v. pi, Production operations and engineering: Society of Petroleum Engineers, p. 35-42.
- Collier, H., 1989, A guide to selecting the proper borehole resistivity logging suite, *in* Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 310-324.

- Crowder, R.E., Irons, L.A., and Yearsley, E.N., 1990, Economic considerations of borehole geophysics for hazardous waste projects, *in* Paillet, F.L., and Saunders, W.R., editors, *Geophysical applications for geotechnical investigations*: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 37-46.
- Crowder, R.E., Yearsley, E.N., and Irons, L.A., 1989, Monitor well completion evaluation with borehole geophysical density logging, paper B, *in* 3rd international symposium on borehole geophysics for minerals, geotechnical, and groundwater applications, proceedings: Society of Professional Well Log Analysts, Minerals and Geotechnical Logging Society, Chapter-at-Large, p. 3-13. Later published in 1990, *in* Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 349-363.
- Daniels, J.J., 1988, Well logging for engineering and environmental applications, *in* Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 521-568.
- Daniels, J.J., and Keys, W.S., 1990, Geophysical well logging for evaluating hazardous waste sites, *in* Ward, S.H., editor, *Geotechnical and environmental geophysics, review and tutorial*: Society of Exploration Geophysicists, v. 1, p. 263-284.
- Darling, H., Patten, D., Young, R.A., and Schwarze, L., 1991, Single-well data integration: Schlumberger Oilfield Review, v. 3(3), July, p. 29-34.
- Darr, P.S., Gilkenson, R.H., and Yearsley, E., 1990, Intercomparison of borehole geophysical techniques in a complex depositional environment, *in* 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: Ground Water Management, no. 2, p. 985-1001.
- Desbrandes, R., 1991, Wireline formation testing--a new extended drawdown technique: *Petroleum Engineering International*, v. 63(5), May, p. 40-44.
- Doveton, J.H., 1986, *Log analysis of subsurface geology--Concepts and computer methods*: John Wiley & Sons, New York, 273 p.
- Doveton, J.H., Charpentier, R.R., and Metzger, E.P., 1990, Three-dimensional trend mapping using gamma-ray well logs, *in* Lithofacies analysis of the Simpson Group: Kansas Geological Survey Petrophysical Series No. 5, p. 15-34.
- Elkington, P.A.S., 1981, *Wireline logging and coal measures rock strength*: University of Nottingham, England, UK, unpublished Ph.D. dissertation, 156 p.
- Golovchenko, X., O'Connell, S.B., and Jarrard, R., 1990, Sedimentary response to paleoclimate from downhole logs at Site 693, Antarctic continental margin, *in* Barker, P.F., Kennett, J.P., O'Connell, S., and Pislak, N.G., editors, *Ocean Drilling Program Proceedings, v. 113, scientific results, Weddell Sea, Antarctica*: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 239-251.
- Griffin, T.J., Jr., 1991, Extended range particle size distribution using laser diffraction technology--A new perspective, SCA-9126, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 12 p.
- Harrison, A.R., Randall, C.J., Aron, J.B., Morris, C.F., Wignall, A.H., Dworak, R.A., Rutledge, L.L., and Perkins, J.L., 1990, Acquisition and analysis of sonic waveforms from a borehole monopole and dipole source for the determination of compressional and shear speeds and their relation to rock mechanical properties and surface seismic data, SPE-20557, *in* SPE annual technical conference exhibition proceedings, v. omega, *Formation evaluation and reservoir geology*: Society of Petroleum Engineers, p. 267-282.
- Holbrook, P., 1990, An accurate rock mechanics approach to pore pressure/fracture gradient prediction, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 181-196.

- Huang, Z., and Gradstein, F.M., 1990, Depth-porosity relationship from deep sea sediments: *Scientific Drilling* 1(4), p.157-162.
- Jarrard, R.D., and Lyle, M., 1991, High-resolution geochemical variations at sites 723, 728, and 731—a comparison of X-ray fluorescence and geochemical logs, chapter 29, *in* Prell, W.L., Niituma, N., et al., editors, Proceedings of the Ocean Drilling Program, Scientific Results, v. 117: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 473-498.
- Jordan, D.W., Slatt, R.M., Gillespie, R.H., D'Agostino, A.E., and Scheihing, M.H., 1991, Applications of outcrop gamma-ray logging to field development and exploration, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 104-122.
- Kamel, M.H., El-Difrawy, M., Bayoumi, A., and Hosney, H., 1991, Porosity-mechanical properties crossplots; possible indicators of fracture intensity, paper N, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 21 p.
- Kamewada, S., Gi, H.S., Taniguchi, S., and Yoneda, H., 1990, Application of borehole image processing system to survey for tunnels, *in* Barton, N., and Stephansson, O., editors, Rock joints [international symposium on rock joints, June 4-6, 1990, Loen Norway, proceedings]: A.A. Balkema, Rotterdam, The Netherlands, p. 51-58.
- Kaneko, F., Kanemori, T., and Tonouchi, K., 1990, Low-frequency shear-wave logging in unconsolidated formations for geotechnical applications, *in* Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 79-98.
- Kern, C.A., and Schepel, K.J., 1991, Formation evaluation aids application of sequence stratigraphy to optimize production of the Means San Andres unit, Andrews County, Texas, paper SS, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 18 p.
- Konstantinov, B.K., and Konstantinov, V.K., 1990, Determination of the weathering ratio by P- and S-wave measurement, *in* Price, D.G., editor, 6th international congress International Association of Engineering Geology, proceedings: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 995-1001.
- Korol'kov, V.N., and Pekshev, V.G., 1990, Geophysical methods for monitoring the construction quality of structures built using jet technology: *Soil Mechanics and Foundation Engineering*, v. 26(4), p. 143-145.
- Laga, P.G., and Vandormael, C., 1990, The use of geophysical well logs in stratigraphy: *Tertiary Research*, v. 11(2-4), p. 195-203.
- Larue, D.K., Montgomery, H., and Anderson, R.N., 1990, Drilling Toa Baja, Puerto Rico; preliminary results of drilling into a non-volcanic island arc massif: *Scientific Drilling*, v. 1(6), p. 283-295.
- Leeder, M., Raiswell, R., Al-Biaty, H., McMahon, A., and Hardman M., 1990, Carboniferous stratigraphy, sedimentation, and correlation of well 48/3-3 in the southern North Sea basin; integrated use of palynology, natural gamma/sonic logs and carbon/sulphur geochemistry: *Journal of the Geological Society of London*, v. 147(2), p. 287-300.
- Lerche, I., 1990, Integrated studies of basin analysis in a one-dimensional setting, chapter 5, *in* Basin analysis, quantitative methods, v. 2: Academic Press, inc., New York, p. 208-239.
- Lerche, I., 1990, Formation temperature and heat flux estimates, chapter 3, *in* Basin analysis, quantitative methods, v. 2: Academic Press, inc., New York, p. 60-96.
- Lippmann, E. Bucker, Ch., Huenges, E., Rauen, A., Wienand, J., Wolter, K., Soffel, H.C., 1989, Rock physical properties; first results of the KTB-field-laboratory: *Scientific Drilling*, v. 1(3), p. 143-149.

- Lovell, M.A., Harvey, P.K., and Anderson, R.N., 1990, Geological evaluation using downhole geochemical measurements, paper HH, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 14 p.
- Maltezos, F., and Anderson, R.N., 1991, Milankovitch cycles in electrical resistivity logs from the Toa Baja scientific drillhole, Puerto Rico: *Geophysical Research Letters*, v. 18(3), p. 517-520.
- Mansure, A.J., 1991, Parameterizing and block-averaging electrical characteristics of a reservoir—an essential part of electrical/electromagnetic evaluation of production process, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 171-180.
- McCann, D.M., and Forster, A., 1990, Reconnaissance geophysical methods in landslide investigations: *Engineering Geology*, v. 29(1), June, p. 59-78.
- McSwiggen, P.L., 1989, CoReLog—a new device for logging resistivity of drill core and its use in research on carbonaceous metasedimentary rocks, *in* Graphite in early Proterozoic rocks of east-central Minnesota: Minnesota Geological Survey Report No. 28, p. 59-68.
- Meglis, I.L., Engelder, T., Graham, E.K., 1990, The effect of stress-relief on ambient microcrack porosity in core samples from the Kent Cliffs (New York) and Moodus (Connecticut) scientific research borehole: *Tectonophysics*, v. 186(1/2), p. 163-173.
- Molinie, A.J., and Ogg, J.G., 1990, Sedimentation-rate curves and discontinuities from sliding-window spectral analysis of logs: *The Log Analyst*, v. 31(6), November-December, p. 370-374.
- Moos, D., Pezard, P., and Lovell, M., 1990, Elastic wave velocities within oceanic layer 2 from sonic full waveform logs in Deep Sea Drilling Project holes 395A, 418A, and 504B: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9189-9207.
- Moos, D., and Zoback, M.D., 1990, Utilization of observations of well bore failure to constrain the orientation and magnitude of crustal stresses—Application to continental, Deep Sea Drilling Project, and Ocean Drilling Program boreholes: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9305-9325.
- Morin, R.H., Newmark, R.L., Barton, C.A., and Anderson, R.N., 1990, State of lithospheric stress and borehole stability at Deep Sea Drilling Project site 504B, eastern equatorial Pacific: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9293-9303.
- Mwenifumbo, C.J., and Blangy, J.P., 1991, Stratigraphy, depositional environments, and diagenesis of sediments at site 700 inferred from downhole measurements, chapter 34, *in* Ciesielski, P.F., Kristoffersen, Y., et al., editors, *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 649-656.
- Mwenifumbo, C.J., and Blangy, J.P., 1991, Short-term spectral analysis of downhole logging measurements from site 704, chapter 30, *in* Ciesielski, P.F., Kristoffersen, Y., et al., editors, *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 577-585.
- Nobes, D.C., Bloomer, S.F., Mienert, J., and Westall, F., 1991, Milankovitch cycles and nonlinear response in the Quaternary record in the Atlantic sector of the Southern Oceans, chapter 29, *in* Ciesielski, P.F., Kristoffersen, Y., et al., editors, *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 551-576.
- Nover, G., Buntebarth, G., Kern, H., Pohl, I., Pusch, G., Schopper, J.R., Schult, A., Will, G., 1989, Petrophysical investigations on core samples of the KTB: *Scientific Drilling*, V. 1(3), p. 135-142.

- Ollier, G., and Mathis, B., 1991, Lithologic interpretation from geophysical logs in holes 737B, 738C, 739C, and 742A, chapter 14, *in* Baron, J., Larsen, B. et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 119: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 263-289.
- Pariso, J.E., Scott, J.H., Kikawa, E., and Johnson, H.P., 1991, A magnetic logging study of hole 735B gabbros at the Southwest Indian Ridge, chapter 17, *in* Von Herzen, R.P., Robinson, P.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 309-321.
- Pezard, P.A., 1990, Electrical properties of mid-ocean ridge basalt and implications for the structure of the upper oceanic crust in hole 504B: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9237-9264.
- Rider, M.H., 1991, *The geological interpretation of well logs*, revised edition: Whittles Publishing, Caithness, Scotland, 175 p.
- Robinson, S.G., 1990, Applications for whole-core magnetic susceptibility measurements of deep-sea sediments--Leg 115 results, *in* Duncan, R.A., Backman, J., Dunbar, R.B., and Peterson, L.C., editors, *Ocean Drilling Program Proceedings*, v. 115, scientific results, Mascarene plateau: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 239-251.
- Saito, H., Shima, H., Toshioka, T., Kaino, S-I., and Ohtomo, H., 1990, A case study of geotomography applied to a detailed investigation of a highway bridge foundation, *in* Paillet, F.L., and Saunders, W.R., editors, *Geophysical applications for geotechnical investigations: American Society for Testing and Material*, Philadelphia, ASTM STP-1101, p. 37-46.
- Schmitz, D., Hirschmann, G., Kessels, W., Koh, J., Rohr, C., and Dietrich, H.-G., 1989, Core orientation in the KTB pilot well: *Scientific Drilling*, v. 1(3), p. 150-155.
- Serra, O., 1987, Wireline logs--geological tool [in French]: *Bulletin de la Société Géologique de France*, series 8, v. 3(7), p. 1,323-1,341.
- Sinha, R.S., 1991, Investigations and testing, chapter 4, *in* Sinha, R.S., editor, *Underground structures--design and construction: Elsevier, Amsterdam, Developments in Geotechnical Engineering*, No. 59B, p. 92-133.
- Stead, D., Szczepanik, Z., and MacKintosh, A.D., 1990, Borehole acoustic logging around underground potash mine openings, *in* Price, D.G., editor, 6th international congress International Association of Engineering Geology, proceedings: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 1037-1044
- Steiner, E.A., and Lippus, C.S., 1990, Use of downhole geophysical methods in a geotechnical investigation of the South Shores landslide, Rancho Palos Verdes, California, USA, *in* Hustrulid, W.A., and Johnson, G.A., editors, *Rock mechanics contributions and challenges--proceedings of the 31st U.S. symposium: A.A. Balkema, Rotterdam*, p. 857-862.
- Stowell, J.R., 1989, An overview of borehole geophysical methods for solving engineering and environmental problems, *in* Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 290-309.
- Tabbagh, A., Pozzi, J.P., Alvarez, F., Pocachard, J., Martin, J.P., Pages, G., Gable, R., Lebert, F., and Hutin, R., 1990, Magnetic field and susceptibility logging in GPF3 borehole at Couy (France) between 0 and 3500 m: *Geophysical Journal International*, v. 101(1), p. 81-88.
- Taylor, K., and Molz, F., 1990, Determination of hydraulic conductivity and porosity logs in wells with a disturbed annulus: *Journal of Contaminant Hydrology*, v. 5(4), P. 317-332.
- Tazioli, G.S., 1989, Nuclear and tracer techniques applied to civil engineering problems in fractured rocks, *in* Isotope techniques in the study of the hydrology of fractured and fissured rocks [advisory group meeting on the application of isotope techniques in the study of the hydrology of fractured and fissured rocks (Vienna, November 17-21, 1986), proceedings]: International Atomic Energy Agency, Vienna, Austria, 253-285.

- Tearpock, D.J., and Bischke, R.E., 1991, Log correlation techniques, chapter 4, *in* Applied subsurface geological mapping: Prentice Hall, Englewood Cliffs, NJ, p. 37-93.
- Towle, G.H., Mueller, T.L., and Whitman, W.W., 1989, The use of laboratory and in-situ measurements of acoustic velocity for seismic modeling: Canadian Well Logging Society Journal, v. 17, no. 1, p. 5-24.
- Wagoner, J.C., Mitchum, R.M., Campion, K.M., and Rhamanian, V.D., 1990, Siliciclastic sequence stratigraphy in well logs, cores, and outcrops—concepts for high-resolution correlation of time and facies: AAPG Methods in Exploration Series, No. 7, 55 p.
- Wetzel, A., Williams, C., Kassens, H., Leger, G., and Auroux, C., 1990, Comparison between laboratory-determined physical properties and downhole measurements in outer Bengal fan deposits, chapter 30, *in* Cochran, J.R., Stow, D.A.V., editors, Proceedings of the Ocean Drilling Program, scientific results, v. 116: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 369-374.
- Whitehead, W.S., Junt, E.R., and Holditch, S.A., 1987, The effects of lithology and reservoir pressure on the in-situ stresses in the Waskom (Travis Peak) field, SPE/DOE-16403, *in* SPE/DOE low permeability reservoirs symposium, proceedings: Society of Petroleum Engineers, p. 139-152.
- Williams, C.F., and Anderson, R.N., 1990, Thermophysical properties of the earth's crust—In situ measurements from continental and ocean drilling: Journal of Geophysical Research, v. 95(B6), June 10, p. 9189-9207.
- Wolfsburger, R.T., Welychka, E.P., and Standen, E.J.W., 1988, Formation MicroScanner applications in southwestern Ontario, *in* 27th annual conference transactions: Ontario Petroleum Institute, London, Ontario, Canada, p. 22 p. Later published in 1990 as, Formation MicroScanner applications in the study of subsurface Paleozoic carbonate rocks; southwestern Ontario, Canada: Carbonates and Evaporites, v. 5(2), p. 123-140.
- Xue, L., and Galloway, W.E., 1990, High-resolution log-derived genetic stratigraphic sequence profile of the Paleogene section, central Texas Gulf Coast, *in* Sequence stratigraphy as an exploration tool; concepts and practices in the Gulf Coast [11th annual research conference, Gulf Coast Section, December 2-5]: Society for Sedimentary Geology (SEPM), Tulsa, OK, p. 399-408.
- Yearsley, E.N., and Crowder, R.E., 1990, Acoustic spectrum analysis of borehole sonic logs for engineering properties and fracture characterization; a case history, *in* 26th annual symposium on engineering geology and geotechnical engineering proceedings: Idaho State University, Pocatello, Idaho, 14 p.
- Zavoiskii, V.N., and Ivashchenko, I.N., 1990, Algorithms for core sample orientation by remnant magnetism: Geophysical Journal v. 9(5), p. 653-667. [original Russian paper published in 1987]

3. DETERMINATION OF FACIES AND DEPOSITIONAL ENVIRONMENT

- Berg, R.R., and Royo, G.R., 1990, Channel-fill turbidite reservoir, Yowlumne field, California, chapter 19, *in* Baarwis, J.H., McPherson, J.G., and Studlick, R.J., editors, Sandstone petroleum reservoirs: Springer-Verlag, New York, p. 467-487.
- Bourquin, S., Mathis, B., Clermonté, J., Didelot, B., Durand, M., Ghanem-Alkhaddour, G., and Le Roux, J., 1990, Well logging and facio-sequential analysis—Methodology and case studies in the Paris basin and the Rhine graben [in French]: Bulletin de la Société Géologique de France, v. 6(4), p. 693-707.
- Hall, B.R. and Link, M.R., 1990, Reservoir description of a Miocene turbidite sandstone, Midway-Sunset field, California, Chapter 21, *in* Baarwis, J.H., McPherson, J.G., and Studlick, R.J., editors, Sandstone petroleum Reservoirs: Springer-Verlag, New York, p. 509-533.
- Langford, R.P., Grigsby, J.D. Howard, W.E., Hall, J.D., and Maguregui, J., 1990, Sedimentary facies and petrophysical characteristics of cores from the Lower Vicksburg gas reservoirs, McAllen Ranch field, Hidalgo County, Texas: Transactions Gulf Coast Association of Geological Societies, v. 40, p. 439-450.

- Lapointe, Ph., and Karachanian, H., 1990, Sedimentology and diagenesis--basic keys to reservoir layering; example of the Umm Shaif Arab zone C reservoir, SPE-21322: Society of Petroleum Engineers, unsolicited paper, 15 p.
- Livbjerg, F., and Mjøs, R., 1989, The Cook Formation, an offshore sand ridge in the Oseberg area, northern North Sea, chapter 23, in Collinson, J.D., editor, Correlation in hydrocarbon exploration [Correlation in Hydrocarbon Exploration (Bergen, Norway, October 3-5, 1988), proceedings]: Graham & Totman, London, p. 299-312.
- Mehta, C.H., Radhakrishnan, S., and Srikanth, G., 1990, Segmentation of well logs by maximum-likelihood estimation: *Mathematical Geology*, v. 22(7), p. 853-869.
- Mwenifumbo, C.J., and Blangy, J.P., 1991, Stratigraphy, depositional environments, and diagenesis of sediments at site 700 inferred from downhole measurements, chapter 34, in Ciesielski, P.F., Kristoffersen, Y., et al., editors, Proceedings of the Ocean Drilling Program, Scientific Results, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 649-656.
- Naiyan, S., and Chengxin, Y., 1990, An approach to interpretation of sedimentary facies by log information, paper J, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 30 p.
- Nystuen, J.P., Knarud, R., Jorde, K., and Stanley, K.O., 1989, Correlation of Triassic to Lower Jurassic sequences, Snorre field and adjacent areas, northern North Sea, chapter 21, in Collinson, J.D., editor, Correlation in hydrocarbon exploration [meeting on correlation in hydrocarbon exploration (Bergen, Norway, October 3-5, 1988), proceedings]: Graham & Totman, London, p. 273-289.
- Ryseth, A., 1989, Correlation of depositional patterns in the Ness Formation, Oseberg area, chapter 24, in Collinson, J.D., editor, Correlation in hydrocarbon exploration [meeting on correlation in hydrocarbon exploration (Bergen, Norway, October 3-5, 1988), proceedings]: Graham & Totman, London, p. 313-326.
- Serra, O., and Abbott, H.T., 1980, The contribution of logging data to sedimentology and stratigraphy, SPE-9270: Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint, 19 p. Later published in 1982, *Society of Petroleum Engineers Journal*, v. 22(1), p. 117-131. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 231-249.
- Sharma, B., Honarpour, M.M., Jackson, S.R., Schatzinger, R., and Tomutsa, L., 1989, Determining the productivity of a barrier island sandstone deposit from integrated facies analysis based on log and core data and fluid production, SPE-19584, in SPE annual technical conference and exhibition, proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 133-148. Later published in 1990, *SPE Formation Evaluation*, v. 5(4), p. 413-420.
- Sharma, B., and Jackson, S., 1991, A crossplot technique for discrimination of various sandstone facies in barrier island sandstone deposits, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., *Reservoir characterization II*: Academic Press, Inc., San Diego, California, p. 689-694.
- Tessier, B., 1990, Criteria for identification of tidal cycles in wells (cores and dipmeter simulation) [in French]: *Bulletin des Centres de Rescherches Exploration-Production Elf-Aquitaine*, v. 14(2), p. 512-520.
- Woofter, D.M., and MacGillivray, J., 1990, Brassey Canada; development of an aeolian sands--a team approach; SPE-20546, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 163-174.

4. IDENTIFICATION OF DEPOSITIONAL ENVIRONMENTS BY SP AND GR PATTERNS

None

5. DIPMETER APPLICATIONS

- Antoine, J.N., and Delhomme, J.P., 1990, A method to derive dips from bed boundaries in borehole images, SPE-20540, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 121-130.
- Babcock, E.A., 1978, Measurement of subsurface fractures from dipmeter logs: AAPG Bulletin, v. 62(7), p. 1111-1126. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 457-472.
- Bigelow, E.L., 1982, Application of dip-related measurements to a complex-carbonate-clastic depositional environment: The Log Analyst, v. 23(2), p. 9-30. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 527-548.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part IV--Structural interpretation: The Log Analyst, v.26(4), July-August, p. 21-43. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 475-497.
- Bigelow, E.L., 1990, Ten steps to successful dip analysis, paper R, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 17 p.
- Bigelow, E.L., 1991, Log-derived dip data successfully delineates east Texas Paluxy reservoirs, paper V, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 16 p.
- Bigelow, E.L., and Stinco, L., 1990, A look at misuse and misunderstanding of log-derived dip information, paper W, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 17 p.
- Buczak, J.M.J., 1989, FMS, dipmeter, and petrophysics, paper 10, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 25 p.
- Jang, L.D., Ku, J.W., and Yeh, Y.H., 1989, Processing and application of the SHDT logging data: Petroleum Geology of Taiwan, no. 25, p. 129-147.
- Qichen, W., 1990, A study on sedimentary facies of Dongying Formation in fault block Wa-16 by using dip-log data, paper V, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 19 p.
- Tessier, B., 1990, Criteria for identification of tidal cycles in wells (cores and dipmeter simulation) [in French]: Bulletin des Centres de Recherches Exploration-Production Elf-Aquitaine, v. 14(2), p. 512-520.
- Torres, D., Strickland, R., and Gianzero, M., 1990, A new approach to determining dip and strike using images, paper JJ, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 16 p.

6. APPLICATIONS OF ARTIFICIAL INTELLIGENCE (AI) AND EXPERT SYSTEMS

(See also 7. Well-Log Data Processing)

- Baldwin, J.L., and Bateman, R.M., 1989, Simultaneous global optimization of unknowns by simulated annealing in neural networks, paper 20, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 28 p.

- Baldwin, J.L., Bateman, R.M., and Wheatley, C.L., 1989, Application of a neural network to the problem of mineral identification from well logs, paper U, in 3rd international symposium on borehole geophysics for minerals, geotechnical, and groundwater applications, proceedings: Society of Professional Well Log Analysts, Minerals and Geotechnical Logging Society, Chapter-at-Large, p. 337-347. Later published in 1990, *The Log Analyst*, v. 31(5), September-October, p. 279-293.
- Derek, H., Johns, R., and Pasternack, E., 1990, Comparative study of backpropagation neural network and statistical pattern recognition techniques in identifying sandstone lithofacies, in 1990 conference on artificial intelligence in petroleum exploration and production, proceedings: Texas A&M University, College Station, p. 41-49.
- Hoffman, L.J.B., Hooger-Brugge, P.J., and Lomas, A.T., 1989, LOGIX, a knowledge-based system for petrophysical evaluation, paper 11, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 13 p.
- Murphy, K., Wyrdrinski, R., Feldman, D.S., and Miller, R., 1991, Planning and interpreting cement bond logs; implementation of an expert system: SPE Computer Applications, July-August, p. 23-25.

7. WELL-LOG DATA PROCESSING (Including Log Correlation and Analysis)

- Anderson, B., Barber, T.D., and Lüling, M.G., 1990, The role of computer modeling in log interpretation, paper L, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Bakke, S., and Griffiths, C.M., 1989, Interactive quantitative matching of stratigraphic sequences of numerical lithostates based on gene-typing techniques, chapter 7, in Collinson, J.D., editor, Correlation in hydrocarbon exploration [Correlation in Hydrocarbon Exploration (Bergen, Norway, October 3-5, 1988), proceedings]: Graham & Totman, London, p. 61-76.
- Chaudhary, S., and Vashist, N., 1991, Formation evaluation of finely laminated reservoir, paper VV, in 32nd Annual Logging Symposium Transactions: Society of Professional Well Log Analysts, 24 p.
- Doveton, J.H., 1986, Log analysis of subsurface geology--Concepts and computer methods: John Wiley & Sons, New York, 273 p.
- Doveton, J.H., Charpentier, R.R., and Metzger, E.P., 1990, Three-dimensional trend mapping using gamma-ray well logs, in Lithofacies analysis of the Simpson Group: Kansas Geological Survey Petrophysical Series No. 5, p. 15-34.
- Esbensen, K.H., and Martens, H., 1987, Predicting oil-well permeability and porosity from wire-line petrophysical logs; a feasibility study using partial least squares regression [proceedings of the Multivariate Statistical Workshop for Geologists and Geochemists, Ulvik, Norway, June 2-5, 1986]: Chemometrics and Intelligent Laboratory Systems, v. 2(1-3), 221-232.
- Etnyre, L.M., 1990, Estimation of petrophysical parameters using a robust-Marquardt procedure, paper Q, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 20 p.
- Ferency, L., Kormos, L., and Szűcs, P., 1990, A new statistical method in well-log interpretation, paper O, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 17 p.
- Hayes, R.G., 1989, An application of pattern recognition principles to the analysis of wireline logs: Oklahoma State University, Stillwater, unpublished Ph.D. dissertation, 173 p.

- Hitchner, J.R., MacCallum, G.T., and MacCallum, W.E., 1987, Statistically based well log analysis applied to reservoir studies: Canadian Heavy Oil Association, presented at the 6th Quarterly Meeting. Later published in 1988, Canadian Well Logging Society Journal, v. 16, no. 1, p. 51-80.
- Jancikovic, B., Duric, Z., Nikolic, B., and Maretic, S., 1990, Computer-processing interpretation method for the incomplete set of logs, and its applications, paper S, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p.
- Karlsen, H.A., and Tjøstheim, D., 1990, Autoregressive segmentation of signal traces with applications to geological dipmeter measurements: IEEE Transactions on Geoscience and Remote Sensing, v. 28(2), p. 171-181.
- Mitchell, W.K., and Nelson, R.J., 1988, A practical approach to statistical log analysis, paper S, in 29th annual symposium transactions: Society of Professional Well Log Analysts, 20 p. Later published in 1991 as, Statistical log analysis made practical: World Oil, v. 212(6), p. 115-119.
- Nelson, R.J., and Mitchell, W.K., 1990, Improved vertical resolution of well logs by resolution matching, paper JJ, in 31st annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p. Later published in 1991: The Log Analyst, v. 32(4), p. 339-349.
- Peeters, M., and Visser, R., 1991, A comparison of petrophysical evaluation packages—LOGIC, FLAME, ELAN, OPTIMA, AND ULTRA: The Log Analyst, v. 32(4), p. 350-357.
- Rodriguez, E., Messatesta, A., and Tetzlaff, D., 1989, Determination of statistical confidence intervals for petrophysical formation properties, paper 23, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 16 p.
- Runge, R.J., and Runge, K.J., 1991, Obtaining lumped (blocked) well logs by simulated annealing: The Log Analyst, v. 32(4), p. 371-378.
- Spalburg, M.R., 1989, An algorithm for simultaneous deconvolution, squaring, and depth-matching of logging data, paper 21, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 14 p.
- Tetzlaff, D.M., Rodriguez, E., and Anderson, R.L., 1989, Estimating facies and petrophysical parameters from integrated well data, paper 8, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 22 p.
- Vermes, M., 1990, Dynamic programming technique to estimate the shift of well-log data, paper TT, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 11 p.
- Zhongliang, W., 1990, Application of probabilistic-statistical model in well logging, paper M, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 15 p.

8. NATURAL GAMMA-RAY SPECTROMETRY

- Almoussli, M.O., and Sutterlin, P.G., 1990, The application of gamma-ray spectralog analysis to a study of Chase Group strata in Stevens County, southwestern Kansas: Shale Shaker, v. 40(4), p. 98-109.
- Archard, G., and Trice, R., 1990, A preliminary investigation into the spectral radiation of the Upper Carboniferous marine sands and its stratigraphic application: Newsletter Stratigraphy, v. 23(3), March 30, p. 167-173.
- Serra, O., Baldwin, J., Quirein, J., 1980, Theory, interpretation, and practical applications of natural gamma-ray spectroscopy, paper Q in 21st annual logging symposium transactions: Society of Professional Well Log Analysts, 30 p. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 297-326.

9. ORGANIC CARBON DETERMINATION AND SOURCE ROCK EVALUATION

- Carpentier, B., Bessereau, G., and Huc, A.Y., 1989, Well logs and source rocks; assessing organic carbon content by the CARBOLOG technique [in French, English abstract]: *Revue de l'Institut Francais du Petrole*, v. 44(6), November-December, p. 699-719. Later published in 1991 [in English], *The Log Analyst*, v. 32(3), p. 279-297.
- Fertl, W.H., and Chilingar, G.V., 1986, Total organic carbon content determined from well logs, SPE-15612: Society of Petroleum Engineers, 61st annual meeting preprint, 14 p. Later published in 1988, *SPE Formation Evaluation*, v. 3(2), p. 407-419. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 555-567.
- Fertl, W.H., and Chilingarian, G.V., 1990, Hydrocarbon resource evaluation in the Woodford Shale using well logs: *Journal of Petroleum Science and Engineering*, v. 4(4), p. 347-357.
- Herron, S.L., 1986, A total organic carbon log for source rock evaluation, paper HH, *in* 27th annual logging symposium transactions: Society of Professional Well Log Analysts, 11 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 578-585.
- Herron, S.L., and Le Tendre, L., 1990, Wireline source-rock evaluation in the Paris Basin, *in* Huc, A.Y., *Deposition of organic facies: AAPG Studies of Geology No. 30*, p. 57-71.
- Hester, T.C., Schmoker, J.W., and Sahl, H.L., 1990, Log-derived regional source-rock characteristics of the Woodford Shale, Anadarko basin, Oklahoma: U.S. Geological Survey Bulletin NO. 1866-D, 38 p. Later published in 1990 in abbreviated form, *Oil and Gas Journal*, v.88(49), December 3, p. 73-78.
- Hinds, G.S., and Berg, R.R., 1990, Estimating organic maturity from well logs, Upper Cretaceous Austin chalk, Texas Gulf Coast: *Transactions Gulf Coast Association of Geological Societies*, v. 40, p. 295-300.
- Mendelson, J.D., and Toksoz, M.N., 1986, In-situ determination of organic richness in sediments by geophysical logging, *in* Biogeochemistry of black shales [international workshop, Hamburg, West Germany, May 28-31, 1985]: *Mitteilungen aus dem Geologisch-Palaontologischen Institut der Universitat Hamburg*, No. 60, p. 23-36. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 587-600.:
- Meyer, B.L., and Nederlof, M.H., 1984, Identification of source rocks on wireline logs by density/resistivity and sonic transit time/resistivity crossplots: *AAPG Bulletin* v. 68(2), p. 121-129. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 569-577.
- Passey, Q.R., Creaney, S., Kulla, J.B., Moretti, F.J., and Stroud, J.D., 1991, A practical model for organic richness from porosity and resistivity logs: *AAPG Bulletin*, v. 74(12), p. 1,777-1,794.
- Vernik, L., and Nur, A., 1990, Ultrasonic velocity and anisotropy of petroleum source rocks--The Bakken Formation, RPP.2 [abs.], *in* Expanded abstracts with biographies, 1990 technical program: Society of Exploration Geophysicists, v. 1, p. 845-848.

10. TIGHT (LOW-PERMEABILITY) GAS SANDSTONES

(See also VII. Shaly Sands)

- Boney, C., 1990, Evaluation of fractured tight gas wells utilizing production data, *in* 37th annual short course proceedings: Southwestern Petroleum Short Course Association, Lubbock, Texas, p. 81-90.
- Chen, S., and Robbins, R.E., 1991, Characterization of low-permeability dry gas reservoirs in the Arkoma basin, SPE-21852, *in* SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 489-499.

- Gas Research Institute, 1991, Geological, petrophysical, and engineering analysis of the Frontier Formation; a case study of the Enron South Hogsback 13-8A cooperative well: Chicago, IL, workshop [Denver, CO, April 14] notes, 124 p.
- Gas Research Institute, 1991, Well logging and log analysis, chapter 5, in Executive summary of SFE No. 3; application of advanced technologies in tight gas sandstones, Travis Peak and Cotton Valley Formations: In Focus—Tight Gas Sands, v. 7(1), p. 17-22.
- Harrison, C.W., III, and Dutton, S.P., 1991, Reservoir characterization of the Frontier tight gas sand, Green River basin, Wyoming, SPE-21879, in SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 717-725.
- Hunt, E.R., and Luffel, D.L., 1989, Development of petrophysical techniques for evaluating tight gas sands: Gas Research Institute Report No. GRI-89-103, 193 p. + appendices.
- Katsube, T.J., Best, M.E., Murphy, T.B., and Mudford, B.S., 1990, Pore-structure characteristics of low-permeability shales from deep formations, paper SCA-9010, in Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 20 p.
- Laubach, S.E., 1989, Fracture analysis of the Travis Peak Formation, western flank of the Sabine Arch, east Texas: Texas Bureau of Economic Geology Report of Investigations No. 185, 55 p.
- Lekia, S.D.L., and Evans, R.D., 1990, A water-gas relative permeability relationship for tight gas sand reservoirs: Journal of Energy Resources Technology, v. 112, p. 239-245.
- Lewis, D.J., and Perrin, J.D., 1990, Wilcox Formation evaluation—improved procedures for tight-gas sand evaluation, SPE-20570, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 435-444.
- Lorenz, J.C., and Hill, R.E., 1991, Subsurface fracture spacing; comparison of inferences from slant/horizontal core and vertical core in Mesaverde reservoirs, SPE-21877, in SPE joint Rocky Mountain regional/low permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 705-716.
- Luffel, D.L., Herrington, K.L., and Walls, J.D., 1990, Effect of extraction and drying on flow, capillary, and electrical properties of Travis Peak cores containing fibrous illites, SPE-20725, in SPE annual technical conference and exhibition, proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 131-138.
- Luffel, D.L., Howard, W.E., and Hunt, E.R., 1989, Relationships of permeability, porosity, and overburden stress derived from extensive core analysis data base in the Travis Peak Formation, SPE-19008, in SPE joint Rocky Mountain regional/low permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 729-740. Later published in 1991 as, Travis Peak core permeability and porosity relationships at reservoir stress: SPE Formation Evaluation, v. 6(3), p. 310-318.
- Morrow, N.R., Cather, M.E., Buckley, J.S., and Dandge, V., 1991, Effects of drying on absolute and relative permeabilities of low-permeability gas sands, SPE-21880, in SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 727-739.
- Soeder, D.J., 1990, Assessing tight gas reservoir quality using petrography and core analysis, in 1989 international gas research conference, proceedings: Gas Research Institute, Chicago, p. 1537-1545.
- Vavra, C.L., Scheihing, M.H., and Klein, J.D., 1991, Reservoir geology of the Taylor Sandstone in the Oak Hill field, Rusk County, Texas—integration of petrology, sedimentology, and log analysis for delineation of reservoir quality in a tight gas sand, in The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 130-158.

Wilson, R.E., Branco, J.E.R., van Heyst, B.G., and Turner, R.H., 1991, Sole Pit--improving the performance of a tight gas reservoir, an integrated approach, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 424-435.

11. ABNORMAL PRESSURE DETECTION AND DETERMINATION

Al-Sadi, H.N., 1985, Use of seismic data in pressure detection, *in* Al-Hashimi, W.S., and Sadooni, F.N., editors, 2nd geological congress on the Middle East proceedings: Arab Geologist Association, Baghdad, Iraq, p. 125-129.

Basu, S., 1990, Clay mineralogy and pressure analysis from seismic information in Krishna-Godavari basin, India: *Geophysics*, v. 55(11), p. 1,447-1,454.

Cao, S., and Lerche, I., 1990, Formation pressure estimation: *Journal of Petroleum Science and Engineering*, v. 4(3), p. 223-233.

Close, J.C., Mavor, M.J., and McBane, R.A., 1990, Importance, genesis, and recognition of fracture permeability in Fruitland coalbed methane reservoirs of the northern San Juan Basin, Colorado, and New Mexico, paper 90-106, *in* Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 1, 19 p.

Davis, E.E., Horel, G.C., MacDonald, R.D., Villinger, H., Bennett, R.H., and Li, H., 1991, Pore pressures and permeabilities measured in marine sediments with a tethered probe: *Journal of Geophysical Research*, v. 96(B4), April 10, p. 5975-5984.

Elphick, R.Y., 1991, Determining geopressures from resistivity logs: *Geobyte*, v. 6(3), April, p. 48-58.

Fertl, W.H., and Chilingarian, G.V., 1988, Detection and evaluation of geopressed subsurface formations based on dielectric (electromagnetic wave propagation) measurements: *Energy Sources*, v. 10, p. 195-200.

Fertl, W.H., and Leach, W.G., 1990, Formation temperature and formation pressure affect the oil and gas distribution in Tertiary Gulf Coast sediments: *Transactions Gulf Coast Association of Geological Societies*, v. 40, p. 205-216.

Haas, M.A., 1990, North Sea application of seismic correlative and seismic velocity (ITT) techniques to predict pore pressure, paper 90-10, *in* Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 3, 19 p. Also published in 1990 as paper SPE-21558: Society of Petroleum Engineers, unsolicited.

Holbrook, P., 1990, An accurate rock mechanics approach to pore pressure/fracture gradient prediction, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 181-196.

Keyser, W., Johnston, L.K., Reeves, R., and Rodriguez, G., 1991, Pore pressure prediction from surface seismic: *World Oil*, v. 212(9), p. 115-124.

Leach, W.G., and Fertl, W.H., 1990, The relationship of formation pressure and hydrocarbon temperature to lithology and hydrocarbon distribution in Tertiary sandstones, paper E, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 14 p.

Lesage, M., Hall, P., Pearson, J.R.A., and Thiercelin, M.J., 1991, Pore-pressure and fracture-gradient predictions, SPE-21607: *Journal of Petroleum Technology*, v. 43(6), p. 652-654.

Martinez, R.D., Schroeder, J.D., and King, G.A., 1987, Formation pressure prediction with seismic data from the Gulf of Mexico, SPE-16621/OTC-5513, *in* Offshore technology conference proceedings: Society of Petroleum Engineers, v. 3, p. 259-268. Later published in 1991, SPE Formation Evaluation, v. 6(1), p. 27-32.

- Mouchet, J-P., and Mitchell, A., 1989, Abnormal pressures while drilling: Elf-Aquitaine, Boussens, France, Technical Manual No. 2, 255 p.
- Owolabi, O.O., Okpobiri, G.A., and Obomanu, I.A., 1990, Prediction of abnormal pressures in the Niger delta basin using well logs, paper 90-75 [also SPE-21575], *in* Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 15 p.
- Paul, R.J., 1990, Seismic detection of overpressuring and fracturing; an example from the Qaidam basin, People's Republic of China, CH1.7, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 176-179. Also published in 1990 as paper OSEA-90117, *in* 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 33-36.
- Rasmus, J., and Voisin, B., 1990, A framework to estimate pore pressures in real-time, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 159-180.
- Shields, T., 1991, Updated program calculates pore pressure, frac gradients: World Oil, v. 212(4), p. 41-44.
- Steffy, D.A., 1991, Abnormal formation pressures in the Navarin Basin, Bering Sea, Alaska: Minerals Management Service Report No. MMS 91-0034, 75 p.
- Weakley, R.R., 1990, Determination of formation pore pressures in carbonate environments from sonic logs, paper 90-9, *in* Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 1, 19 p.
- Weakley, R.R., 1991, Use of surface seismic data to predict formation pore pressure worldwide, SPE-21752, *in* SPE western regional meeting proceedings: Society of Petroleum Engineers, p. 37-42.
- Yerkes, R.F., Levine, P., and Wentworth, C.M., 1990, Abnormally high fluid pressures in the region of the Coalinga earthquake sequence and their significance, chapter 13, *in* Rymer, M.J., and Ellsworth, W.L., editors, The Coalinga, California, earthquake of May 2, 1983: U.S. Geological Survey Professional Paper 1487, p. 235-257.

12. OIL AND GAS SHALES

- Cramer, D.D., 1991, Stimulating shales, part I--Understanding the reservoir important to successful stimulation; part II--Experience reveals better Bakken stimulation techniques : Oil and Gas Journal, v. 89(16,17), April 22, p. 53-61, April 29, p. 56-61.
- Gatens, J.M., III, Lancaster, D.E., Harrison, C.W., III, and Guidry, F.K., 1988, Using in-situ tests and acoustic logs to determine mechanical properties and stress profiles in the Devonian shales, SPE-18523, *in* SPE eastern regional meeting, proceedings: Society of Petroleum Engineers, p. 7-20. Reprinted in 1989, Devonian Gas Shales Technology Review, v. 6(1), July, p. 8-24. Later published in 1990, SPE Formation Evaluation, v. 5(3), p. 248-254.
- Guidry, F.K., Truman, R.B., Campbell, R.L., and Harrison, C.W., 1988, Devonian shale-specific computation methodology: Gas Research Institute Report No. GRI-88/255, 40 p.
- Luffel, D.L., and Guidry, F.K., 1989, Core analysis results, comprehensive study wells, Devonian shale: Gas Research Institute Report No. 89-151, 129 p.
- Luffel, D.L., and Guidry, F.K., 1990, New core-analysis methods for measuring reservoir rock properties of Devonian shale, SPE-20571, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 445-452.
- Luffel, D.L., Guidry, F.K., and Curtis, J.B., 1990, Formation evaluation in Devonian shale through application of new core and log analysis methods, SPE-21297, *in* SPE eastern regional meeting proceedings: Society of Petroleum Engineers, v. 1, p. 293-301.

Watson, A.T., and Mudra, J., 1991, Characterization of Devonian shales with X-ray computed tomography, SCA-9122, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 12 p.

13. HEAVY OIL AND TAR SANDSTONES

Hitchner, J.R., MacCallum, G.T., and MacCallum, W.E., 1987, Statistically based well log analysis applied to reservoir studies: Canadian Heavy Oil Association, presented at the 6th Quarterly Meeting. Later published in 1988, Canadian Well Logging Society Journal, v. 16, no. 1, p. 51-80.

Leitham, R., 1989, Quantifying gas and bitumen saturation of the Elkton and Shunda carbonates in the Seal area, north central Alberta: Canadian Well Logging Society Journal, v. 17, no. 1, p. 27-39.

14. COAL AND COALBED METHANE

Borsaru, M., Charbucinski, J., Eisler, P., and C. Ceravolo, C., 1991, Neutron-gamma logging in coal seams of variable iron content: Nuclear Geophysics, v. 5(1/2), p. 117-122.

Colson, J.L., 1991, Evaluating gas content of Black Warrior Basin coalbeds from wireline log data: SPE Computer Applications, July-August, p. 15-22.

Davies, A.L., and McManus, D.A., 1990, Geotechnical applications of downhole sonic and neutron logging for surface coal mining: Exploration Geophysics [Australia], v. 21(1-2), p. 73-81.

Elkington, P.A.S., 1981, Wireline logging and coal measures rock strength: University of Nottingham, England, UK, unpublished Ph.D. dissertation, 156 p.

Fialka, B.N., McClanahan, R.K., Robb, G.A. and Longstaffe, F.J., 1990, The evaluation of cyclic steam stimulation in an oil sand reservoir using post-steam core analysis, paper 90-108, in Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting, preprints v. 3, 16 p.

Gash, B.W., 1991, Measurement of 'rock properties' in coal for coalbed methane production, SCA-9119, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.

Hoyer, D., 1991, Evaluation of coalbed fracture porosity from dual laterolog, paper U, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 15 p.

Johnson, M., Hanes, J., Harman, P., and Pryor, E., 1986, Exploration of deposits, chapter 4, in Martin, C.H., editor, Australasian coal mining practice: Australasian Institute of Mining and Metallurgy Monograph Series, No. 12, Victoria, Australia, p. 58-70.

Johnston, D.J., 1990, Geochemical logs thoroughly evaluate coalbeds: Oil and Gas Journal, v. 88(52), December 24, p. 45-51.

Johnston, D.J., Gales, R.H., and Ahmed, U., 1991, A new logging method for enhanced coal grading, SPE-21810, in SPE Rocky Mountain regional/low permeability reservoirs symposium, proceedings: Society of Petroleum Engineers, p. 63-70. Also published in 1991 as, Enhanced coal grading with wireline logs, paper 9166, in 1991 Coalbed methane symposium proceedings: University of Alabama College of Continuing Studies, p. 107-114.

Johnston, D.J., and Scholes, P.L., 1991, Predicting cleats in coal seams from mineral and maceral composition with wireline logs, in Schwochow, S.D., Murray, D.K., and Fahy, M.F., editors, Coalbed methane of western North America: Rocky Mountain Association of Geologists, Denver, Colorado, p. 123-136.

Mavor, M., 1991, Guidelines for evaluating coalbed methane reservoir potential, in Coalbed methane workshop [Denver, CO, April 14]: Gas Research Institute, Chicago, IL, 39 p.

- Mavor, M.J., and McBane, R.A., 1990, Formation evaluation of exploration coalbed methane wells, paper CIM/SPE 90-101 [also SPE-21589], *in* Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 3, 19 p.
- Mullen, J., 1991, Cased hole coal analysis in producing gas wells in the San Juan Basin, paper 9135, *in* 1991 Coalbed methane symposium proceedings: University of Alabama College of Continuing Studies, p. 373-380.
- Mullen, M.J., 1991, Cleat detection in coalbeds using the microlog, *in* Schwochow, S.D., Murray, D.K., and Fahy, M.F., editors, Coalbed methane of western North America: Rocky Mountain Association of Geologists, Denver, Colorado, p. 123-136.
- Palmer, I.D., and Sparks, D.P., 1990, Measurement of induced fractures by downhole television camera in coalbeds of the Black Warrior basin, SPE-20660, *in* SPE annual technical conference and exhibition proceedings, v. pi, Production operations and engineering: Society of Petroleum Engineers, p. 459-472. Later published in 1991: Journal of Petroleum Technology, v. 43(3), p. 270-275, 326-328.
- Schmidt, P.W., and Anderson, J.C., 1991, Orientation of drill core using paleomagnetism in coal exploration, *in* 25th Newcastle symposium on advances in the study of the Sydney basin: University of Newcastle, Department of Geology, Newcastle, NSW, Australia, p. 118-121.
- Zhao, J.Q., Liu, J.S., Ni, H.F., Liu, D., Wuru, G.S., Guo, T.C., Wu, Y., and Liu, J.L., 1991, Neutron capture gamma-ray spectral well logging using a ^{252}Cf -HPGe probe: Nuclear Geophysics, v. 5(1/2), p. 123-129.

**15. FRACTURE DETECTION AND EVALUATION;
WELLBORE BREAKOUTS AND IN SITU STRESS ANALYSIS**
(See also 19. Ground water; 20. Igneous rocks; 21. Geothermal logging)

- Aadnøy, B.S., 1990, Inversion technique to determine the in-situ stress field from fracturing data: Journal of Petroleum Science and Engineering, v. 4, p. 127-141.
- Aadnøy, B.S., 1990, In-situ stress directions from borehole fracture traces: Journal of Petroleum Science and Engineering, v. 4 p. 143-153.
- Allison, M.L., 1990, Remote detection of active faults using borehole breakouts in the Heber geothermal field, Imperial Valley, California: Geothermal Resources Council Transactions, v. 14(partII), 1359-1364.
- Arditty, P.C., Falt, U., Mathieu, F., and Staron, P., 1991, Characterization of fractured hydrocarbon reservoirs using the EVA acoustic logging tool: The Log Analyst, v. 32(3), p. 215-232.
- Arditty, P.C., Schein, F., and Staron, P., 1988, Imaging of fractured reservoirs using the EVA tool, paper IPA 88-22.01, *in* 17th annual convention proceedings: Indonesian Petroleum Association, Jakarta, p. 151-169.
- Avasthi, J.M., Nolen-Hoeksema, R.C., El Rabaa, A.W.M., and Wilson, L.E., 1990, In-situ stress evaluation in the McElroy field, west Texas, SPE-20105, *in* SPE Permian Basin oil and gas recovery conference [Midland, TX] proceedings: Society of Petroleum Engineers, p. 189-196. Later published in 1991: SPE Formation Evaluation, v. 6(3), p. 301-309.
- Babcock, E.A., 1978, Measurement of subsurface fractures from dipmeter logs: AAPG Bulletin, v. 62(7), p. 1111-1126. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 457-472.
- Barlai, Z., Rez, F., and Vámos, A., 1990, Analysis of fractured reservoirs by the COMWELL-B.R. system aided by the Microlambda fracture-finder technique, paper G, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 54 p.

- Barton, C.A., and Zoback M.D., 1990, Self-similar distribution of macroscopic fractures at depth in crystalline rock in the Cajon Pass scientific drillhole, in Barton, N., and Stephansson, O., editors, Rock joints [international symposium on rock joints, June 4-6, 1990, Loen Norway, proceedings]: A.A. Balkema, Rotterdam, The Netherlands, p. 163-170.
- Borm, G., Lempp, Ch., Natau, O., and Rockel, Th., 1989, Instabilities of borehole and drillcores in crystalline rocks, with examples from the KTB pilot hole: *Scientific Drilling*, v. 1(3), p. 105-114.
- Brother, M.P., Robinson, J.Q., and Soukup, W.G., 1990, Detection of fractures in sedimentary rock with conventional borehole geophysics, in 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: *Ground Water Management*, no. 2, p. 939-952.
- Clauss, B., Marquart, G., and Fuchs, K., 1989, Stress orientations in the North Sea and Fennoscandia, a comparison to the central European stress field, in Gregersen, S., and Basham, P.W., editors, Earthquakes at North-Atlantic passive margins--neotectonics and postglacial rebound: Kluwer Academic Publishers, Dordrecht, p. 277-287.
- Cooke-Yarborough, P., and Cull, R., 1990, Integrated fracture-modeling in the Zechstein carbonates, United Kingdom, North Sea, paper MM, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Corre, B., 1990, Characterization of fracture networks from well tests using a new analytical solution, SPPE-20533, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 447-56.
- Cramer, D.D., 1991, Stimulating shales, part I--Understanding the reservoir important to successful stimulation; part II--Experience reveals better Bakken stimulation techniques : *Oil and Gas Journal*, v. 89(16,17), April 22, p. 53-61, April 29, p. 56-61.
- Crary, S., Dennis, B., Denoo, S., et al., 1987, Fracture detection with logs: The Technical Review, v. 35(1), April, p. 22-34. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 444-456.
- Dart, R.L., 1990, In situ stress analysis of wellbore breakouts from Oklahoma and the Texas Panhandle: U.S. Geological Survey Bulletin 1866-F, 28 p.
- Dennis, B., Standen, E., Georgi, D.T., and Callow, G.O., 1987, Fracture identification and productivity predictions in a carbonate reef complex, SPE-16808, in SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 579-588. A similar version also published in 1987 as, Fracture identification techniques in carbonates, paper Y, in 11th formation evaluation symposium transactions: Canadian Well Logging Society, 27 p. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 277-286.
- Dominguez, H., and Perez, G., 1991, Permeability estimation in naturally fractured fields by analysis of Stoneley waves: *The Log Analyst*, v. 32(3), p. 120-128.
- Fett, T., 1991, Fracture evaluation in the Austin Chalk, in Chuber, S., editor, Austin Chalk exploration symposium, geology, geophysics, and formation evaluation, abstracts and short papers: South Texas Geological Society, p. 41-49.
- Fialka, B.N., McClanahan, R.K., Robb, G.A. and Longstaffe, F.J., 1990, The evaluation of cyclic steam stimulation in an oil sand reservoir using post-steam core analysis, paper 90-108, in Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting, preprints v. 3, 16 p.
- Fritsen, A., and Corrigan, T., 1990, Establishment of a geological fracture model for dual porosity simulations on the Ekofisk field, in Buller, A.T., Berg, E., et al., editors, North Sea oil and gas reservoirs II: Graham & Trotman, London, p. 173-184.

- Gadeken, L.L., Ginzel, W.J., Sharbak, D.E., Shorck, K.A., Sitka, M.A., and Taylor, J.L., III, 1991, The determination of fracture orientation using a directional gamma-ray tool, paper AA, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 13 p.
- Gatens, J.M., III, Lancaster, D.E., Harrison, C.W., III, and Guidry, F.K., 1988, Using in-situ tests and acoustic logs to determine mechanical properties and stress profiles in the Devonian shales, SPE-18523, in SPE eastern regional meeting, proceedings: Society of Petroleum Engineers, p. 7-20. Reprinted in 1989, Devonian Gas Shales Technology Review, v. 6(1), July, p. 8-24. Later published in 1990, SPE Formation Evaluation, v. 5(3), p. 248-254.
- Goetz, J.F., Seiler, D.D., and Edmiston, C.S., 1990, Geological and borehole features described by the Circumferential Acoustic Scanning Tool, paper Z, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p. Also published in 1990, as paper OSEA-90113, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 1-18.
- Goetz, J.F., Seiler, D.D., and Edmiston, C.S., 1991, Fracture description in the Austin Chalk using CAST images, in Chuber, S., editor, Austin Chalk exploration symposium, geology, geophysics, and formation evaluation, abstracts and short papers: South Texas Geological Society, p. 51-63.
- Goldberg, D., Broglia, C., and Becker, K., 1991, Fracturing, alteration, and permeability--In-situ properties in hole 735B, chapter 14, in Von Herzen, R.P., Robinson, P.T., et al., editors, Proceedings of the Ocean Drilling Program, scientific results, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 553-556.
- Hartenbaum, B.A., and Rawson, G., 1980, Topical report on subsurface fracture mapping from geothermal wellbores--phase I, pulsed radar techniques, phase II, conventional logging methods, phase 3, magnetic borehole ranging: U.S. Department of Energy Report No. DOE/ET/27013-T1, variously paginated
- Hess, A.E., and Paillet, F.L., 1990, Applications of the thermal-pulse flowmeter in the hydraulic characterization of fractured rocks, in Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 99-112.
- Heyesse, D.R., Wu, R.S., and Fletcher, C.R., 1988, Natural fracture identification in the Granite Wash Formation using full wave sonic (FWS) data: Canadian Well Logging Society Journal, v. 16, no. 1, p. 7-22.
- Hélot, D., Etchecopar, A., and Cheung, Ph., 1990, New developments in fracture characterization from logs, in Maury, V., Fourmaintraux, D., editors, Rock at great depth: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 1471-1478.
- Howard, K.W.F., 1990, Geophysical well logging methods for the detection and characterization of fractures in hard rocks, in Ward, S.H., editor, Geotechnical and environmental geophysics, review and tutorial: Society of Exploration Geophysicists, v. 1, p. 287-307.
- Iverson, W.P., 1990, Characterization of a naturally fractured chalk oil reservoir, Silo, Wyoming, CH4.4, in Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 245-248.
- Johnson, R.A., Bartshe, R.T., 1991, Locating Niobrara Fractures, part I--Using resistivity to assess Niobrara fracture patterns for horizontal wells; part II--Analyzing resistivity, oil production of Niobrara in Wyoming's Silo field: Oil and Gas Journal, v. 89(35) September 2, p. 99-102, 89(36), September 9, p. 68-71.
- Kamel, M.H., El-Difrawy, M., Bayoumi, A., and Hosney, H., 1991, Porosity-mechanical properties crossplots; possible indicators of fracture intensity, paper N, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 21 p.
- Kessels, W., 1989, Observation and interpretation of time-dependent behaviour of borehole stability in the Continental Deep Drilling pilot borehole: Scientific Drilling, v. 1(3), p. 127-134.

- Kirchoff-Stein, K.S., Silver, E.A., Moos, D., Barton, C.A., Jarrard, R., 1991, Results of borehole televiewer observations in the Celebes and Sulu Seas, chapter 8, *in* Silver, E.A., Rangan, C., von Breymann, M.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 124: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 105-118.
- Kulander, B.R., Dean, S.L., and Ward, B.J., Jr., 1990, Fractured core analysis—interpretation, logging, and use of natural and induced fractures in cores: AAPG Methods in Exploration Series No. 8, 88 p.
- Laubach, S.E., 1989, Fracture analysis of the Travis Peak Formation, western flank of the Sabine Arch, east Texas: Texas Bureau of Economic Geology Report of Investigations No. 185, 55 p.
- Leary, P.C., 1990, Basement rock fracture structure from Cajon Pass, California and Siljan ring, Sweden, Borehole Geophysical Logs, BGP.1, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 153-155.
- Lehne, K.A., and Aadnøy, B.S., 1990, Quantitative analysis of stress regimes and fractures from logs and drilling records of a North Sea chalk field, paper PP, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 18 p.
- Liangxiao, Z., 1990, Determination of the contemporary tectonic-stress direction and its applications in exploring and developing fractured reservoirs, paper T, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 26 p.
- Lorenz, J.C., and Hill, R.E., 1991, Subsurface fracture spacing; comparison of inferences from slant/horizontal core and vertical core in Mesaverde reservoirs, SPE-21877, *in* SPE joint Rocky Mountain regional/low permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 705-716.
- Luthi, S.M., and Souhaite, P., 1990, Fracture apertures from electrical borehole scans: *Geophysics*, v. 55(7), p. 821-833.
- Meglis, I.L., Engelder, T., Graham, E.K., 1990, The effect of stress-relief on ambient microcrack porosity in core samples from the Kent Cliffs (New York) and Moodus (Connecticut) scientific research borehole: *Tectonophysics*, v. 186(1/2), p. 163-173.
- Miller, W.K., II, Peterson, R.E., Stevens, J.E., Lackey, C.B., and Harrison, C.W., 1991, In-situ stress profiling and prediction of hydraulic fracture azimuth for the Canyon Sands Formation, Sonora and Sawyer fields, Sutton County, Texas, SPE-21848, *in* SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 445-456.
- Milne, N.A., and Barr, D.C., 1990, Subsurface fracture analysis, Palm Valley gas field: APEA [Australian Petroleum Exploration Association] Journal, v. 30, part 1, p. 321-341.
- Missman, R.A., and Jameson, J., 1991, An evolving description of a fractured carbonate reservoir—The Lisburne field, Prudhoe Bay, Alaska, SPE-22161, *in* SPE international Arctic technology conference [May 29-31, Anchorage, Alaska] proceedings: Society of Petroleum Engineers, p. 699-718.
- Moos, D., and Morin, R.H., 1991, Observations of wellbore failure in the Toa Baja well; implications for the state of stress in the north coast Tertiary basin, Puerto Rico: *Geophysical Research Letters*, v. 18(3), p. 505-508.
- Moos, D., and Zoback, M.D., 1990, Utilization of observations of well bore failure to constrain the orientation and magnitude of crustal stresses—Application to continental, Deep Sea Drilling Project, and Ocean Drilling Program boreholes: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9305-9325.
- Morin, R.H., 1990, Information on stress conditions in the oceanic crust from oval fractures in a deep borehole: *Geophysical Research Letters*, v. 17(9), p. 1311-1314.

- Morin, R.H., Newmark, R.L., Barton, C.A., and Anderson, R.N., 1990, State of lithospheric stress and borehole stability at Deep Sea Drilling Project site 504B, eastern equatorial Pacific: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9293-9303.
- Moser, H., and Drost, W., 1989, Application of single and multiwell techniques in fractured rocks, *in* Isotope techniques in the study of the hydrology of fractured and fissured rocks [advisory group meeting on the application of isotope techniques in the study of the hydrology of fractured and fissured rocks (Vienna, November 17-21, 1986), proceedings]: International Atomic Energy Agency, Vienna, Austria, 223-237.
- Noblett, B.R., and Howard, L.P., 1991, Using the Circumferential Borehole Imaging Log to identify and orient vertical fractures in the Austin Chalk, *in* Chuber, S., editor, Austin Chalk exploration symposium, geology, geophysics, and formation evaluation, abstracts and short papers: South Texas Geological Society, p. 105-109.
- Noblett, B.R., and Lee, H.S., 1990, Detection and orientation of vertical fracture systems using circumferentially propagated acoustic waves, paper S, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 13 p.
- Onaisi, A., Sarda, J.P., and Bouteca, M., 1990, Experimental and theoretical investigation of borehole breakouts, *in* Hustrulid, W.A., and Johnson, G.A., editors, Rock mechanics contributions and challenges--proceedings of the 31st U.S. symposium: A.A. Balkema, Rotterdam, p. 703-710.
- Padgett, M.J., and Nester, D.C., 1991, Fracture evaluation of block P-0315, Point Arguello field, offshore California, using core, outcrop, seismic data, and curved space analysis, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 242-268.
- Paillet, F.L., 1985, Problems in fractured-reservoir evaluation and possible routes to their solution: *The Log Analyst*, v. 26(6), November-December, p. 26-41. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 478-489.
- Paillet, F.L., 1989, Analysis of geophysical well logs and flowmeter measurements in boreholes penetrating subhorizontal fracture zones, Lac du Bonnet batholith, Manitoba, Canada: U.S. Geological Survey Water-Resources Investigations Report No. 89-4211, 30 p.
- Paillet, F.L., 1991, High-resolution flow logging in observation boreholes during hydraulic testing of fractured-rock aquifers, paper L, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- Paillet, F.L., 1991, Qualitative and quantitative interpretation of fracture permeability using acoustic full-waveform logs: *The Log Analyst*, v. 32(3), p. 256-270.
- Paillet, F.L., and Goldberg, D., 1991, Acoustic televiewer log images of natural fractures and bedding planes in the Toa Baja borehole, Puerto Rico: *Geophysical Research Letters*, v. 18(3), p. 501-504.
- Paillet, F.L., Hess, A.E., and Morin, R.H., 1990, Estimation of the relative permeability distribution in fractured granitic rocks by means of vertical flow measurements in the Siblingen borehole, Switzerland: U.S. Geological Survey Water-Resources Investigations Report No. 90-4034, 26 p.
- Paillet, F.L., and Kim, K., 1985, The character and distribution of borehole breakouts and their relationship to in situ stresses in deep Columbia River basalts: Rockwell Hanford, Richland, Washington, Operations Report RHO-BW-CR-155, December, 27 p. Later published in 1987, *Journal of Geophysical Research*, v. 92(B7), p. 6,223-6,234. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 387-398.

- Palmer, I.D., and Sparks, D.P., 1990, Measurement of induced fractures by downhole television camera in coalbeds of the Black Warrior basin, SPE-20660, *in* SPE annual technical conference and exhibition proceedings, v. pi, Production operations and engineering: Society of Petroleum Engineers, p. 459-472. Later published in 1991: *Journal of Petroleum Technology*, v. 43(3), p. 270-275, 326-328.
- Paul, R.J., 1990, Seismic detection of overpressuring and fracturing; an example from the Qaidam basin, People's Republic of China, CH1.7, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 176-179. Also published in 1990 as paper OSEA-90117, *in* 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 33-36.
- Sandburg, E.V., Olsson, O.L., Falk, L.R., 1991, Combined interpretation of fracture zones in crystalline rock using single-hole, crosshole tomography and directional borehole-radar data: *The Log Analyst*, v. 32 (3), p. 108-119.
- Shamir, G., Zoback, M.D., and Cornet, F.H., 1990, Fracture-induced stress heterogeneity--Examples from the Cajon Pass scientific drillhole near the San Andreas fault, California, *in* Barton, N., and Stephansson, O., editors, *Rock joints [international symposium on rock joints, June 4-6, 1990, Loen Norway, proceedings]*: A.A. Balkema, Rotterdam, The Netherlands, p. 719-724.
- Shanks, T.R., Kwon, B.S., DeVries, M.R., and Wichmann, P.A., 1976, A review of fracture detection with well logs, SPE-6159: Society of Petroleum Engineers, 51st annual meeting [New Orleans] preprint, 17 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 491-507.
- Skopec, R.A., 1991, In-situ stress evaluation in core analysis, SCA-9103, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Standen, E., 1991, Tips for analyzing fractures on electrical wellbore images: *World Oil*, v. 212(4), April, p. 99-117.
- Stead, D., Szczepanik, Z., and MacKintosh, A.D., 1990, Borehole acoustic logging around underground potash mine openings, *in* Price, D.G., editor, 6th international congress International Association of Engineering Geology, proceedings: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 1037-1044
- Taylor, T.J., 1983, Interpretation and application of borehole televiewer surveys, paper QQ, *in* 24th annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16*, p. 591-609.
- Taylor, T.J., 1991, A method for identifying fault related fracture systems using the borehole televiewer, paper JJ, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p.
- Tazioli, G.S., 1989, Nuclear and tracer techniques applied to civil engineering problems in fractured rocks, *in* Isotope techniques in the study of the hydrology of fractured and fissured rocks [advisory group meeting on the application of isotope techniques in the study of the hydrology of fractured and fissured rocks (Vienna, November 17-21, 1986), proceedings]: International Atomic Energy Agency, Vienna, Austria, 253-285.
- Teufel, L.W., 1991, Influence of lithology and geologic structure on in situ stress--examples of stress heterogeneity in reservoirs, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., *Reservoir characterization II: Academic Press, Inc., San Diego, California*, p. 565-578.
- Tsang, C.F., 1988, A borehole fluid-conductivity logging method for the determination of fracture-inflow parameters, *in* Earth sciences division annual report, 1987: Lawrence Berkeley National Laboratory Report No. 24200, p. 214-218.
- Tsang, C-F., Hufschmied, P., and Hale, F.V., 1990, Determination of fracture inflow parameters with a borehole fluid conductivity logging method: *Water Resources Research*, v. 26(4), p. 561-578.

- Vernik, L., and Zoback, M.D., 1990, Strength anisotropy in crystalline rock—implications for assessment of in situ stresses from wellbore breakouts, *in* Hustrulid, W.A., and Johnson, G.A., editors, Rock mechanics contributions and challenges—proceedings of the 31st U.S. symposium: A.A. Balkema, Rotterdam, p. 841-848.
- Wallace, M.L., 1990, The identification of natural fractures and their orientations in the Spaberry/Dean Formations in west Texas, *in* 37th annual short course proceedings: Southwestern Petroleum Short Course Association, Lubbock, Texas, p. 227-240.
- Whitehead, W.S., Junt, E.R., and Holditch, S.A., 1987, The effects of lithology and reservoir pressure on the in-situ stresses in the Waskom (Travis Peak) field, SPE/DOE-16403, *in* SPE/DOE low permeability reservoirs symposium, proceedings: Society of Petroleum Engineers, p. 139-152.
- Yearsley, E.N., and Crowder, R.E., 1990, Acoustic spectrum analysis of borehole sonic logs for engineering properties and fracture characterization; a case history, *in* 26th annual symposium on engineering geology and geotechnical engineering proceedings: Idaho State University, Pocatello, Idaho, 14 p.
- Yearsley, E.N., LoCoco, J.J., and Crowder, R.E., 1990, Borehole geophysics applied to fracture hydrology, *in* FOCUS conference on eastern regional ground water issues, proceedings: Ground Water Management, no. 3, p. 255-267.
- Zoback, M.D., Moos, D., Mastin, L., and Anderson, R.N., 1985, Well bore breakouts and in situ stress: Journal of Geophysical Research, v. 90(B7), p. 5,523-5,530. Discussion and reply in 1986, Journal of Geophysical Research, v. 91(B14), p. 14,161-14,164. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 399-406.

16. PERMAFROST AND GAS HYDRATES

- Collett, T.S., and Bird, K.J., 1988, Freezing-point depression at the base of ice-bearing permafrost on the North Slope of Alaska, *in* Senneset, K., editor, 5th international conference on permafrost [August 2-5], proceedings: Tapir Publishers, Trondheim, Norway, v. 1, p. 50-55.
- Gahe, E., Allard, M., Seguin, M.K., and Fortier, R., 1988, Measurements of active layer and permafrost parameters with electrical resistivity, self potential, and induced polarization, *in* Senneset, K., editor, 5th international conference on permafrost [August 2-5], proceedings: Tapir Publishers, Trondheim, Norway, v. 1, p. 148-153.
- Harrison, W.D., 1991, Permafrost response to surface temperature change and its implications for the 40,000-year surface temperature history at Prudhoe Bay: Journal of Geophysical Research, v. 96(B1), January 10, p. 683-695.

17. EVAPORITES

- Curial, A., 1987, Paleogene saline and hypersaline sedimentation in Bressan (France), a comparison of the log and lithologic data; well log study of the Etrez field and basin synthesis [in French]: Documents des Laboratoires de Géologie, Lyon, no. 100, 192 p.

18. MINERAL EXPLORATION AND EVALUATION

- Dankházi, G., Zilahi-Sebess, L., Szongoth, G., Bán, I., Kiss, B., and Tóth, J., 1990, Induced polarization (IP) - a new type of measurement in boreholes, paper J, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p.
- Fanchao, Z., Fengzeng, X., and Jianping, Z., 1989, Grade determination of ore beds by well logging in situ, *in* Ward, S.H., editor, An overview of exploration geophysics in China—1988: Society of Exploration Geophysics, p. 447-470.
- Killeen, P.G., and Elliott, B.E., 1990, Model boreholes for gamma-ray logging: intercalibration of North American and European calibration facilities, paper GG, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 14 p.

- Kobr, M., 1990, Borehole and petrophysics investigations applied to metallic mineral prospecting in the Zlaté Hory ore district, NW Moravia, Czechoslovakia, paper SS, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 11 p.
- Robinson, S.G., 1990, Applications for whole-core magnetic susceptibility measurements of deep-sea sediments-- Leg 115 results, in Duncan, R.A., Backman, J., Dunbar, R.B., and Peterson, L.C., editors, Ocean Drilling Program Proceedings, v. 115, scientific results, Mascarene plateau: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 239-251.
- Tabbagh, A., Pozzi, J.P., Alvarez, F., Pocachard, J., Martin, J.P., Pages, G., Gable, R., Lebert, F., and Hutin, R., 1990, Magnetic field and susceptibility logging in GPF3 borehole at Couy (France) between 0 and 3500 m: Geophysical Journal International, v. 101(1), p. 81-88.

19. GROUND WATER APPLICATIONS

(See also 15. Fracture detection; 20. Igneous rocks)

- Aller, L., Bennett, T.W., Hackett, G., Petty, R.J., Lehr, J.H., Sedoris, H., Nielsen, D.M., and Denne, J.E., 1989, Handbook of suggested practices for the design and installation of ground-water monitoring wells: National Water Well Association, Dublin, Ohio, 398 p.
- Bochicchio, R.M., 1990, Borehole induction logging to complement the mapping of an electrically conductive plume, in Zapaorozec, A., editor, Minimizing risk to the hydrologic environment [American Institute of Hydrology conference, March 13-15, Las Vegas, NV]: Kendall/Hunt Publishing Company, Dubuque, IA, p. 210-218.
- Brother, M.P., Robinson, J.Q., and Soukup, W.G., 1990, Detection of fractures in sedimentary rock with conventional borehole geophysics, in 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: Ground Water Management, no. 2, p. 939-952.
- Clark, J.E., 1989, Ground water flow in deep saline aquifers, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 151-176.
- Darr, P.S., Gilkenson, R.H., and Yearsley, E., 1990, Intercomparison of borehole geophysical techniques in a complex depositional environment, in 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: Ground Water Management, no. 2, p. 985-1001.
- Fielitz, K., and Giesel, W., 1991, Evaluation of groundwater salinity from well logs and conclusions on flow velocities, in De Brueck, W., editor, Hydrogeology of salt water intrusion [a report of the commission on hydrogeology of salt water intrusion of the International Association of Hydrogeologists]: Verlag Heinz Heise, IAS International Contributions to Hydrogeology, v. 11, p. 397-411.
- Henry, D.K., Mickelson, B.J., and Ohnstad, D., 1990, Well logging and depth specific sampling in a producing water supply well as an aid in identifying contaminant stratification, in 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: Ground Water Management, no. 2, p. 969-983.
- Hess, A.E., and Paillet, F.L., 1990, Applications of the thermal-pulse flowmeter in the hydraulic characterization of fractured rocks, in Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 99-112.
- Howard, K.W.F., 1990, The role of well logging in contaminant transport studies, in Ward, S.H., editor, Geotechnical and environmental geophysics, review and tutorial: Society of Exploration Geophysicists, v. 1, p. 289-301.

- Jorgensen, D.G., 1990, Estimating water quality from geophysical logs, in Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 47-64.
- Keys, W.S., 1988, Borehole geophysics applied to ground-water hydrology: U.S. Geological Survey Open-File Report 87-539, 305 p. Later published in 1989: National Water Well Association, Dublin, Ohio, 313 p. Later published in 1990, Borehole geophysics applied to ground-water investigations: U.S. Geological Survey, Techniques of Water-Resources Investigations, book 2, chapter E2, 150 p.
- Lyle, R., 1989, Demonstration of mechanical integrity utilizing radioactive tracer surveys, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 65-73.
- Manchon, B., 1990, Theory—Rendering injected subsurface waste non-hazardous as demonstrated by geophysical logs, in 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: Ground Water Management, no. 2, p. 1017-1031.
- Mares, S., and Zbofil, A., 1990, Logging in studying hydraulic parameters of aquifers, paper RR, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 13 p.
- McKinley, R.M., 1989, Temperature and noise logging for noninjection related fluid movement, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 45-63.
- Newman, J.L., and Corbell, G.W., 1990, Continuous in situ measurements of nitrates and other contaminants utilizing specialized geophysical logging devices, in 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: Ground Water Management, no. 2, p. 953-967.
- Paap, H.J., Nussbaum, T.W., and Supernaw, I.R., 1989, The oxygen activation log; a laboratory evaluation, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 25-43.
- Paillet, F.L., Hess, A.E., and Morin, R.H., 1990, Estimation of the relative permeability distribution in fractured granitic rocks by means of vertical flow measurements in the Siblingen borehole, Switzerland: U.S. Geological Survey Water-Resources Investigations Report No. 90-4034, 26 p.
- Paillet, F.L., Zaghloul, E.S., and El Dafer, T., 1990, Application of geophysical well log analysis to characterization of aquifers in the Sinai region, Republic of Egypt: U.S. Geological Survey Water Resources Investigations Report NO. 90-4194, 54 p.
- Palaz, I., 1986, Application of geophysical logs to estimate moisture-content profiles in unsaturated tuff, Yucca, Mountain, Nevada, in NWWA conference on characterization monitoring of the vadose (unsaturated) zone, proceedings: National Well Water Association, Dublin, Ohio, p. 424-438.
- Radhakrishna, I, and Rao, T.G., 1990, Evaluation of hydrogeochemical parameters with spontaneous potential logs: Journal of Hydrology, v. 114, p. 245-257.
- Rasmussen, K.R., and Bai, W., 1990, Logging in deep water wells in central Jutland, Denmark: Boreas [Norwegian University Press] v. 16(4), p. 393-404.
- Rehfeldt, K.R., 1989, Application of the borehole flowmeter method to measure spatially variable hydraulic conductivity at the MADE site, in Conference on new field techniques for quantifying the physical and chemical properties of heterogeneous aquifers, proceedings: National Well Water Association, Dublin, Ohio, p. 419-443.

- Rutkowski, M.A., and Talyor, R.W., 1990, A geophysical study of the radioactive contamination of the sandstone aquifer of eastern Wisconsin, *in* FOCUS conference on eastern regional ground water issues, proceedings : Ground Water Management, no. 3, p. 343-357.
- Sandburg, E.V., Olsson, O.L., Falk, L.R., 1991, Combined interpretation of fracture zones in crystalline rock using single-hole, crosshole tomography and directional borehole-radar data: *The Log Analyst*, v. 32 (3), p. 108-119.
- Taylor, K., and Molz, F., 1990, Determination of hydraulic conductivity and porosity logs in wells with a disturbed annulus: *Journal of Contaminant Hydrology*, v. 5(4), P. 317-332.
- Tsang, C-F., Hufschmied, P., and Hale, F.V., 1990, Determination of fracture inflow parameters with a borehole fluid conductivity logging method: *Water Resources Research*, v. 26(4), p. 561-578.
- van Slyke, G., and Romero, J., 1991, Aquifer data from geophysical logs--Denver Basin, Colorado, basic data report II: Colorado Division of Water Resources, 15 p.
- Waller, P., and McCormick, T., 1989, A comparison of results of internal mechanical integrity testing of large diameter class I municipal injection wells using both pacers and radioactive tracer methodologies, *in* International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 75-103.
- Weiss, J.S., 1987, Determining dissolved-solids concentrations in mineralized ground water of the Gulf Coast aquifer systems using electric logs, *in* Vecchioli, J., and Johnson, A.I., editors, Regional aquifer systems of the United States, aquifers of the Atlantic and Gulf Coastal Plain: American Water Resources Association, Bethesda, MD, Monograph Series No. 9, p. 139-150.
- Wiesneneck, J.B., 1989, Practical experience with oxygen activation logging in south Mississippi, *in* International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 7-24
- Yearsley, E.N., Crowder, R.E., and Irons, L.A., 1991, Monitoring well completion evaluation with borehole geophysical density logging: *Ground Water Monitoring Review*, v. 11(1), p. 103-111.
- Yearsley, E.N., LoCoco, J.J., and Crowder, R.E., 1990, Borehole geophysics applied to fracture hydrology, *in* FOCUS conference on eastern regional ground water issues, proceedings : Ground Water Management, no. 3, p. 255-267.

20. IGNEOUS AND METAMORPHIC ROCKS (Including DSDP and ODP Results)

(See also 15. Fracture detection; 19. Ground water; 21. Geothermal)

- Anderson, R.N., Alt, J.C., Malpas, J., Lovell, M.A., Harvey, P.K., and Pratson, E.L., 1990, Geochemical well logging in basalts--the Palisades sill and the oceanic crust of hole 504B: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9265-9292.
- Becker, K., 1990, Introduction to special section on logging and downhole measurements in Deep Sea Drilling Project/Ocean Drilling Program deep crustal holes: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9149-9151.
- Belgasem, B.A., Barlai, Z., and Réz, F., 1990, Interpretation of well logs in the oil-bearing reservoir, Nafoora-Augila Field, Libya, paper OO, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 23 p.
- Borehole Research Group, 1990, Ocean Drilling Program wireline logging manual, 2nd edition: Lamont-Doherty Geological Observatory, Columbia University, 6 v.s + appendix, variously paginated.
- Borm, G., Lempp, Ch., Natau, O., and Rockel, Th., 1989, Instabilities of borehole and drillcores in crystalline rocks, with examples from the KTB pilot hole: *Scientific Drilling*, v. 1(3), p. 105-114.

- Broglia, C., and Ellis, D., 1990, Effect of alteration, formation absorption, and standoff on the response of the thermal neutron porosity log in gabbros and basalts--Examples from Deep Sea Drilling Project-Ocean Drilling Program sites: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9171-9188.
- Carlson, R.L., and Herrick, C.N., 1990, Densities and porosities in the oceanic crust and their variations with depth and age: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9153-9170.
- Draxler, J.K., Lingnau, R., and Wöhr, T., 1990, Formation Microscanner application in crystalline rocks, paper KK, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Gatto, H., and Lauterjung, J., 1990, Quantitative and qualitative determination of minerals in crystalline rocks, paper N, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Harvey, P.K., Lovell, M.A., and Bristow, J.F., 1991, The interpretation of geochemical logs from the oceanic basement; mineral modelling in Ocean Drilling Program (ODP) hole 735B: *Nuclear Geophysics*, v. 5(3), p. 267-277.
- Jarrard, R.D., and Broglia, C., 1991, Geophysical properties of oceanic crust at sites 768 and 770, chapter 6, *in* Silver, E.A., Rangin, C., von Breymann, M.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 124: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 75-90
- Jarrard, R.D., and Schaar, R., 1991, Electrical properties of basalts from sites 768 and 770, chapter 7, *in* Silver, E.A., Rangin, C., von Breymann, M.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 124: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 91-104.
- Jian, O., Jieying, W., Xiandi, S., and Fuxing, K., 1990, Log interpretation of an igneous rock formation in Liaodong Bay, paper P, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 20 p.
- Kirchoff-Stein, K.S., Silver, E.A., Moos, D., Barton, C.A., Jarrard, R., 1991, Results of borehole televiewer observations in the Celebes and Sulu Seas, chapter 8, *in* Silver, E.A., Rangin, C., von Breymann, M.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 124: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 105-118.
- Lovell, M.A., Harvey, P.K., and Anderson, R.N., 1990, Geological evaluation using downhole geochemical measurements, paper HH, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 14 p.
- Moos, D., Pezard, P., and Lovell, M., 1990, Elastic wave velocities within oceanic layer 2 from sonic full waveform logs in Deep Sea Drilling Project holes 395A, 418A, and 504B: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9189-9207.
- Morin, R.H., 1990, Information on stress conditions in the oceanic crust from oval fractures in a deep borehole: *Geophysical Research Letters*, v. 17(9), p. 1311-1314.
- Paillet, F.L., 1989, Analysis of geophysical well logs and flowmeter measurements in boreholes penetrating subhorizontal fracture zones, Lac du Bonnet batholith, Manitoba, Canada: U.S. Geological Survey Water-Resources Investigations Report No. 89-4211, 30 p.
- Paillet, F.L., 1991, Use of geophysical well logs in evaluating crystalline rocks for siting of radioactive-waste repositories: *The Log Analyst*, v. 32(3), p. 85-107.
- Paillet, F.L., Hess, A.E., and Morin, R.H., 1990, Estimation of the relative permeability distribution in fractured granitic rocks by means of vertical flow measurements in the Siblingen borehole, Switzerland: U.S. Geological Survey Water-Resources Investigations Report No. 90-4034, 26 p.

- Pariso, J.E., Scott, J.H., Kikawa, E., and Johnson, H.P., 1991, A magnetic logging study of hole 735B gabbros at the Southwest Indian Ridge, chapter 17, *in* Von Herzen, R.P., Robinson, P.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 309-321.
- Pelling, R., Harvey, P.K., Lovell, M.A., and Goldberg, D., 1991, Statistical analysis of geochemical logging tool data from hole 735B, Atlantis fracture zone, southwest Indian Ocean, chapter 15, *in* Von Herzen, R.P., Robinson, P.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 271-283.
- Pezard, P.A., 1990, Electrical properties of mid-ocean ridge basalt and implications for the structure of the upper oceanic crust in hole 504B: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9237-9264.
- Pezard, P.A., Howard, J.J., and Goldberg, D., 1991, Electrical conduction in oceanic gabbros, hole 735B, Southwest Indian Ridge, chapter 18, *in* Von Herzen, R.P., Robinson, P.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 323-331.
- Pezard, P., and Lovell, M., 1990, Downhole images; electrical scanning reveals the nature of subsurface oceanic crust: *Eos Transactions*, v. 71(20), May 15, p. 709, 718.
- Schimschal, U., 1991, A comparison of stationary and continuous gamma-ray spectral data with cores in granites: U.S. Geological Survey Open-File Report No. OF 91-0101, 22 p.
- Straub, A., Gros, Y., and Krückel, U., 1990, Structural description by electrical imaging of a borehole in granite, paper LL, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Von Herzen, R.P., Dick, H.J.B., and Robinson, P.T., 1991, Downhole measurements and physical properties, hole 735B; summary and tectonic relationships, chapter 28, *in* Von Herzen, R.P., Robinson, P.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 553-556.
- Williams, C.F., and Anderson, R.N., 1990, Thermophysical properties of the earth's crust--In situ measurements from continental and ocean drilling: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9189-9207.

21. GEOTHERMAL WELL-LOG EVALUATION

(See also XI. Temperature logging; 15. Fracture detection;
19. Ground water; 20. Igneous rocks)

- Bjornsson, G., and Bodvarsson, G., 1990, A survey of geothermal reservoir properties: *Geothermics*, v. 19(1), p. 17-27.
- Dennis, B., 1990, High-temperature borehole instrumentation developed for the DOE hot dry rock geothermal energy program: *Geothermal Resources Council Bulletin*, v. 19(3), p. 71-81.
- Dennis, B., and Van Eeckhout, E., 1990, Well logging results from three geothermal fields in Central America: *Geothermal Resources Council Transactions*, v. 14, part 1, p. 373-378.
- Dunlap, H.F., and Dorfman, M.H., 1990, Well logging research for the Department of Energy geopressured-geothermal project: *Geothermal Resources Council Transactions*, v. 14, part 1, p. 527-530.
- Estabrook, R.M., 1990, A comprehensive study of dry-steam flowmeter accuracy at the Geysers geothermal field: *Geothermal Resources Council Transactions*, v. 14, part 1, p. 387-394.
- Fialka, B.N., Pyszka, M.H., and Chhina, H.S., 1990, the evaluation of temperature logging in thermal application, SPE-20084, in SPE California regional meeting proceedings: Society of Petroleum Engineers, p. 571-580.

- Hartenbaum, B.A., and Rawson, G., 1980, Topical report on subsurface fracture mapping from geothermal wellbores—phase I, pulsed radar techniques, phase II, conventional logging methods, phase 3, magnetic borehole ranging: U.S. Department of Energy Report No. DOE/ET/27013-T1, variously paginated
- Lysne, P., and Jacobson, R., 1990, Scientific drilling in hydrothermal terrains: *Scientific Drilling*, v. 1(4), p. 184-192.
- Lysne, P.C., Worthington, P.F., and Pyle, T.E., 1990, Scientific logging in high-temperature boreholes: *Scientific Drilling*, v. 1(6), p. 296-299.
- Mansure, A.J., and Meldau, R.F., 1989, Steam-zone electrical characteristics for geodiagnostic evaluation of steamflood performance, SPE-18797, in SPE California regional meeting, proceedings: Society of Petroleum Engineers, p. 499-508. Later published in 1990, *SPE Formation Evaluation*, v. 5(3), p. 241-247.
- Masse, P.J., Gosney, T.C., and Long, D.L., 1990, The use of pulsed-neutron capture logs to identify steam breakthrough—case study; South Belridge middle expansion steamflood project, SPE/DOE-20252, in SPE/DOE symposium on enhanced oil recovery proceedings: Society of Petroleum Engineers, p. 773-784. Later published in 1991: *SPE Formation Evaluation*, v. 6(3), p. 319-326.
- Moore, P.W., and Pearson, R.A., 1989, Logging results, section 1—Production logging results, in Parker, R.H., editor, Hot dry rock geothermal energy [phase 2B final report of the Camborne School of Mines Project], v. 1: Pergamon Press, Oxford, p. 559-677.
- Pearson, R.A., Moore, P.W., Harker, C., and Lanyon, G.W., 1989, Logging results, section 1—proprietary logging results, in Parker, R.H., editor, Hot dry rock geothermal energy [phase 2B final report of the Camborne School of Mines Project], v. 1: Pergamon Press, Oxford, p. 423-558.
- Sinha, A.K., 1990, Advanced formation evaluation concepts of the Well Data System (WDS) for evaluating geothermal reservoirs: *Geothermal Resources Council Transactions*, v. 14, part 1, p. 439-450.

Part C: FIRST AUTHOR LISTING

- Aadnøy, B.S., 1990, Inversion technique to determine the in-situ stress field from fracturing data: *Journal of Petroleum Science and Engineering*, v. 4, p. 127-141.
- Aadnøy, B.S., 1990, In-situ stress directions from borehole fracture traces: *Journal of Petroleum Science and Engineering*, v. 4 p. 143-153.
- Aas, M., Bacri, J.-C., Frenois, C., Salin, D., and Woumeni, R., 1990, 3-D acoustic scanner, SPE-20599, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 725-732.
- Abdulla, A.A., Stewart, R.R., and Henley, D.C., 1990, Travetime inversion and reflection processing of cross-hole seismic data, BG2.8, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 47-50.
- Aguilera, R., 1990, Extensions of Pickett plots for the analysis of shaly formations by well logs: *The Log Analyst*, v. 31, n. 5, September-October, p. 304-309.
- Ahmed, U., 1990, Production logging as an integral part of horizontal well transient pressure test, SPE-20980, *in* Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 355-366.
- Ahmed, U., Crary, S.F., and Coates, G.R., 1989, Permeability estimation; the various sources and their interrelationship, SPE-19604, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 649-662. Later published in 1990 as, The interrelationship between various permeability measurements, paper I, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 21 p. Later published in 1991: *Journal of Petroleum Technology*, v. 43(5), p. 578-587.
- Ahmed, U., Markley, M.E., Crary, S.F., and Liu, O.Y., 1989, Enhanced in-situ stress profiling using microfrac, core and sonic-logging data, SPE-19004, *in* SPE joint Rocky Mountain regional/low permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 707-719. Later published in 1991: *SPE Formation Evaluation*, v. 6(2), p. 243-251.
- Akhter, M.S., and Kreitler, C.W., 1990, Reliability and applicability of DSTs and bottomhole pressure measurements in Texas Gulf Coast Tertiary formations: *Journal of Petroleum Science and Engineering*, v. 3, p. 287-303.
- Al-Khafaji, A.H., Jabur, M.A., and Al-Mashat, A.M., 1988, Gas-brine contact detection by sonic wave velocities: *Journal of Petroleum Research*, v. 7(1), p. 1-12.
- Al-Sadi, H.N., 1985, Use of seismic data in pressure detection, *in* Al-Hashimi, W.S., and Sadooni, F.N., editors, 2nd geological congress on the Middle East proceedings: Arab Geologist Association, Baghdad, Iraq, p. 125-129.
- Alixant, J.-L., 1990, Improved directional interpretation method, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 197-230..
- Alixant, J.L., and Desbrandes, R., 1989, Real-time pore pressure evaluation options, paper TS-3-3, *in* International well control symposium and workshop [November 27-29, Baton Rouge, LA], proceedings: U.S. Minerals Management Service, 22 p.
- Allen, D., Auzeais, F., Dussan, E., Goode, P., Ramakrishnan, T.S., Schwartz, L., Wilkinson, D., Fordham, E., Hammond, P., and Williams, R., 1991, Invasion revisited: *Schlumberger Oilfield Review*, v. 3(3), July, p. 10-23 .
- Allen, D.F., Best, D.L., Evans, M., and Holenka, J., 1990, The effect of wellbore condition on wireline and MWD neutron-density logs, SPE-20563, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 345-356.

- Aller, L., Bennett, T.W., Hackett, G., Petty, R.J., Lehr, J.H., Sedoris, H., Nielsen, D.M., and Denne, J.E., 1989, Handbook of suggested practices for the design and installation of ground-water monitoring wells: National Water Well Association, Dublin, Ohio, 398 p.
- Allison, M.L., 1990, Remote detection of active faults using borehole breakouts in the Heber geothermal field, Imperial Valley, California: Geothermal Resources Council Transactions, v. 14(partII), 1359-1364.
- Almoussili, M.O., and Sutterlin, P.G., 1990, The application of gamma-ray spectralog analysis to a study of Chase Group strata in Stevens County, southwestern Kansas: Shale Shaker, v. 40(4), p. 98-109.
- Anderson, B., Barber, T.D., and Lüling, M.G., 1990, The role of computer modeling in log interpretation, paper L, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Anderson, B.I., Safinya, K.A., Habeshy, T.M., Davidson, A., and Gilmore, R., 1987, The response of the Electromagnetic Propagation Tool to bed boundaries, SPE-16768, in SPE annual technical meeting and exhibition, proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 267-282. Later published in 1990, SPE Formation Evaluation, v. 5(4), p. 458-464.
- Anderson, R.N., 1990, Geochemistry and geophysics of the Moodus, Connecticut, drillhole from well logs, and the fluid flux associated with movement along low-angle thrust faults: Scientific Drilling, v. 1(5), p. 238-252.
- Anderson, R.N., 1990, Method of locating oil and gas horizons using a wellbore heat flow log: U.S. Patent 4,947,682, 9 p.
- Anderson, R.N., 1991, Geophysical logs from the Toa Baja scientific drillhole, Puerto Rico: Geophysical Research Letters, v. 18(3), p. 497-500.
- Anderson, R.N., Alt, J.C., Malpas, J., Lovell, M.A., Harvey, P.K., and Pratson, E.L., 1990, Geochemical well logging in basalts—the Palisades sill and the oceanic crust of hole 504B: Journal of Geophysical Research, v. 95(B6), June 10, p. 9265-9292.
- Antoine, J.N., and Delhomme, J.P., 1990, A method to derive dips from bed boundaaries in borehole images, SPE-20540, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 121-130.
- Archard, G., and Trice, R., 1990, A preliminary investigation into the spectral radiation of the Upper Carboniferous marine sands and its stratigraphic application: Newsletter Stratigraphy, v. 23(3), March 30, p. 167-173.
- Arditty, P.C., Falt, U., Mathieu, F., and Staron, P., 1991, Characterization of fractured hydrocarbon reservoirs using the EVA acoustic logging tool: The Log Analyst, v. 32(3), p. 215-232.
- Arditty, P.C., Schein, F., and Staron, P., 1988, Imaging of fractured reservoirs using the EVA tool, paper IPA 88-22.01, in 17th annual convention proceedings: Indonesian Petroleum Association, Jakarta, p. 151-169.
- Armentrout, J.M., 1990, Research conference overview, in Sequence stratigraphy as an exploration tool; concepts and practices in the Gulf Coast [11th annual research conference, Gulf Coast Section, December 2-5]: Society for Sedimentary Geology (SEPM), Tulsa, OK, p. 1-10.
- Auzerais, F.M., Ellis, D.V., Luthi, S.M., Dussan, E.B., V, and Pinoteau, B.J., 1990, Laboratory characterization of anisotropic rocks, SPE-20602, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 751-758.
- Avasthi, J.M., Nolen-Hoeksema, R.C., El Rabaa, A.W.M., and Wilson, L.E., 1990, In-situ stress evaluation in the McElroy field, west Texas, SPE-20105, in SPE Permian Basin oil and gas recovery conference [Midland, TX] proceedings: Society of Petroleum Engineers, p. 189-196. Later published in 1991: SPE Formation Evaluation, v. 6(3), p. 301-309.

- Baardsen, H., Nilsen, V., Leknes, J., and Hove, A., 1991, Quantifying saturation distribution and capillary pressures using centrifuge and computer tomography, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 102-121.
- Babcock, E.A., 1978, Measurement of subsurface fractures from dipmeter logs: AAPG Bulletin, v. 62(7), p. 1111-1126. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 457-472.
- Badr, A.R., and Ayoub, M.R., 1989, Study of a complex carbonate reservoir using the Formation MicroScanner (FMS), SPE-17977, *in* SPE Middle East oil technical conference and exhibition proceedings: Society of Petroleum Engineers, p. 507-516. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 345-354.
- Badry, R., 1991, Production logs optimize horizontal tests: World Oil, v. 212(3), p. 59-98.
- Bakke, S., and Griffiths, C.M., 1989, Interactive quantitative matching of stratigraphic sequences of numerical lithostates based on gene-typing techniques, chapter 7, *in* Collinson, J.D., editor, Correlation in hydrocarbon exploration [Correlation in Hydrocarbon Exploration (Bergen, Norway, October 3-5, 1988), proceedings]: Graham & Totman, London, p. 61-76.
- Baldwin, J.L., and Bateman, R.M., 1989, Simultaneous global optimization of unknowns by simulated annealing in neural networks, paper 20, *in* Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 28 p.
- Baldwin, J.L., Bateman, R.M., and Wheatley, C.L., 1989, Application of a neural network to the problem of mineral identification from well logs, paper U, *in* 3rd international symposium on borehole geophysics for minerals, geotechnical, and groundwater applications, proceedings: Society of Professional Well Log Analysts, Minerals and Geotechnical Logging Society, Chapter-at-Large, p. 337-347. Later published in 1990, The Log Analyst, v. 31(5), September-October, p. 279-293.
- Balling, N., Nielsen, S.B., van Rooy, D., and Saxov, S., 1984, The subsurface temperature field in Denmark; measuring and modelling results, *in* 3rd international seminar on energy, European geothermal update: Commission of the European Communities, Report EUR-8853, p. 95-103.
- Barlai, Z., Rez, F., and Vámos, A., 1990, Analysis of fractured reservoirs by the COMWELL-B.R. system aided by the Microlambda fracture-finder technique, paper G, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 54 p.
- Barton, C.A., and Moos, D., 1988, Analysis of macroscopic fractures in the Cajon Pass scientific drillhole; over the interval 1,829-2,115 meters: Geophysical Research Letters, v. 15(9), p. 1,013-1,016. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 287-290.
- Barton, C.A., and Zoback M.D., 1990, Self-similar distribution of macroscopic fractures at depth in crystalline rock in the Cajon Pass scientific drillhole, *in* Barton, N., and Stephansson, O., editors, Rock joints [international symposium on rock joints, June 4-6, 1990, Loen Norway, proceedings]: A.A. Balkema, Rotterdam, The Netherlands, p. 163-170.
- Barton, C.A., Zoback, M.D., and Burns, K.L., 1988, In-situ stress orientation and magnitude at the Fenton geothermal site, New Mexico, determination from wellbore breakouts: Geophysical Research Letters, v. 15(5), p. 467-470. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 439-442.
- Basu, S., 1990, Clay mineralogy and pressure analysis from seismic information in Krishna-Godavari basin, India: Geophysics, v. 55(11), p. 1,447-1,454.
- Becker, K., 1990, Introduction to special section on logging and downhole measurements in Deep Sea Drilling Project/Ocean Drilling Program deep crustal holes: Journal of Geophysical Research, v. 95(B6), June 10, p. 9149-9151.

- Becker, K., 1990, A guide to formation testing using ODP drill-string packers: Texas A&M University, Ocean Drilling Program Technical Note No. 14, 143 p.
- Belgasem, B.A., Barlai, Z., and Réz, F., 1990, Interpretation of well logs in the oil-bearing reservoir, Nafoora-Augila Field, Libya, paper OO, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 23 p.
- Ben Dhia, H., 1991, Thermal regime and hydrodynamics in Tunesia and Algeria: *Geophysics*, v. 56(7), p. 1093-1102
- Bensen, A.K., 1991, Application of shear, compressional, and V_s/V_p data to evaluate subsurface geology and associated conditions and hazards, in 27th symposium on engineering geology and geotechnical engineering [April 10-12, Logan, Utah], proceedings: Utah State University, Logan, Utah, p. 39-1--39-18.
- Bent, P.W., Radford, S.R., and Eaton, N.G., 1991, Reheat cores to measure gas better: *Petroleum Engineer International*, v. 63(10), p. 46-50.
- Berg, R.R., and Royo, G.R., 1990, Channel-fill turbidite reservoir, Yowlumne field, California, chapter 19, in Baarwis, J.H., McPherson, J.G., and Studlick, R.J., editors, *Sandstone petroleum reservoirs*: Springer-Verlag, New York, p. 467-487.
- Berger, P., and Crumb, R.E., 1990, An integrated approach for the evaluation of shaly-sands reservoirs, offshore northwest Java, OSEA-90190, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 375-384.
- Betts, P., Blount, C., Broman, B., Clark, B., Hibbard, L., Louis, A., and Oosthoek, P., 1990, Acquiring and interpreting logs in horizontal wells: *Schlumberger Oilfield Review*, v. 2(3), July, p. 34-51.
- Beydoun, W.B., 1990, Reservoir characterization from crosshole seismic--new directions, in Buller, A.T., Berg, E., et al., editors, *North Sea oil and gas reservoirs II*: Graham & Trotman, London, p. 116-124.
- Bigelow, E.L., 1982, Application of dip-related measurements to a complex-carbonate-clastic depositional environment: *The Log Analyst*, v. 23(2), p. 9-30. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation I--log evaluation*: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 527-548.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part IV--Structural interpretation: *The Log Analyst*, v.26(4), July-August, p. 21-43. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation I--log evaluation*: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 475-497.
- Bigelow, E.L., 1990, Ten steps to successful dip analysis, paper R, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 17 p.
- Bigelow, E.L., 1991, Log-derived dip data successfully delineates east Texas Paluxy reservoirs, paper V, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 16 p.
- Bigelow, E.L., and Domangue, E.J., 1990, An effective new technology for evaluation of cement integrity: the Segmented Bond Log, paper Y, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 12 p.
- Bigelow, E.L., Domangue, E.J., and Lester, R.A., 1990, A new and innovative technology for cement evaluation, SPE-20585, in SPE annual technical conference exhibition proceedings, v. omega, *Formation evaluation and reservoir geology*: Society of Petroleum Engineers, p. 579-590
- Bigelow, E.L., and Stinco, L., 1990, A look at misuse and misunderstanding of log-derived dip information, paper W, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 17 p.

- Bilsland, M., Mobed, R., Cheruvier, E., and White, J., 1990, Predicting hydrocarbon saturations in thin sandstones drilled with oil-based mud, paper C, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 16 p.
- Bjornsson, G., and Bodvarsson, G., 1990, A survey of geothermal reservoir properties: *Geothermics*, v. 19(1), p. 17-27.
- Blackbourn, G.A., 1990, Cores and core logging for geologists: Whittles Publishing, Caithness, Scotland, 113 p.
- Blaha, P., and Valtr, V., 1990, Borehole logging in investigations of slope deformation, in Price, D.G., editor, 6th international congress International Association of Engineering Geology, proceedings: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 2099-2105.
- Bochicchio, R.M., 1990, Borehole induction logging to complement the mapping of an electrically conductive plume, in Zapaorozec, A., editor, Minimizing risk to the hydrologic environment [American Institute of Hydrology conference, March 13-15, Las Vegas, NV]: Kendall/Hunt Publishing Company, Dubuque, IA, p. 210-218.
- Boney, C., 1990, Evaluation of fractured tight gas wells utilizing production data, in 37th annual short course proceedings: Southwestern Petroleum Short Course Association, Lubbock, Texas, p. 81-90.
- Bonnie, R.J.M., 1991, Evaluation of various pulsed neutron capture logging tools under well-defined laboratory conditions, paper OO, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 11 p.
- Borehole Research Group, 1988, Perspectives on scientific logging from the Ocean Drilling Program, v. 5, in Ocean Drilling Program wireline logging manual: Lamont-Doherty Geological Observatory, Columbia University, variously paginated.
- Borehole Research Group, 1990, Ocean Drilling Program wireline logging manual, 2nd edition: Lamont-Doherty Geological Observatory, Columbia University, 6 v.s + appendix, variously paginated.
- Borm, G., Lempp, Ch., Natau, O., and Rockel, Th., 1989, Instabilities of borehole and drillcores in crystalline rocks, with examples from the KTB pilot hole: *Scientific Drilling*, v. 1(3), p. 105-114.
- Borsaru, M., Charbucinski, J., Eisler, P., and C. Ceravolo, C., 1991, Neutron-gamma logging in coal seams of variable iron content: *Nuclear Geophysics*, v. 5(1/2), p. 117-122.
- Bourke, L.T., 1989, Recognizing artifact images of the Formation Microscanner, paper WW, in 30th annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 191-215.
- Bourke, L., Delfiner, P., Trouiller, J-C, Fett, T., Grace, M., Luthi, S., Serra, O., and Standen, E., 1989, Using Formation Microscanner images: *The Technical Review*, v. 37(1), January, p. 16-40. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 610-634.
- Bouroz, C., Angelier, J., and Bergerat, F., 1990, Sancerre-Couy drilling project—a comparison between FMS images and cores: *Bulletin de la Société Géologique de France*, v. 6(5), p. 779-787.
- Bourquin, S., Mathis, B., Clermonté, J., Didelot, B., Durand, M., Ghanem-Alkhaddour, G., and Le Roux, J., 1990, Well logging and facio-sequential analysis—Methodology and case studies in the Paris basin and the Rhine graben [in French]: *Bulletin de la Société Géologique de France*, v. 6(4), p. 693-707.
- Boyd, D., 1989, High resolution Pe logging for improved lithology identification: *Canadian Well Logging Society Journal*, v. 17, no. 1, p. 41-66.

- Boyeldieu, C., Coblenz, A., and Pelissier-Combescure, J., 1984, Formation evaluation in oil base mud wells, paper BB, in 25th annual logging symposium transactions: Society of Professional Well Log Analysts, 18 p. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 201-218.
- Boyeldieu, C., and Jeffreys, P., 1988, Formation Microscanner--new developments, paper WW, in 11th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, 16 p. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 175-190.
- Brigaud, F., Chapman, D.S., and Le Douaran, S., 1990, Estimating thermal conductivity in sedimentary basins using lithologic data and geophysical well logs: AAPG Bulletin, v. 74(9), p. 1,459-1,477.
- Brock, A., and Barton, K.J., 1984, Equilibrium temperature and heat flow density measurements in Ireland, in 3rd international seminar on energy, European geothermal update: Commission of the European Communities, Report EUR-8853, p. 425-429.
- Broding, R.A., 1982, Volumetric scan well logging: The Log Analyst, v. 23(1), p. 14-19. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 93-97.
- Brogia, C., and Ellis, D., 1990, Effect of alteration, formation absorption, and standoff on the response of the thermal neutron porosity log in gabbros and basalts--Examples from Deep Sea Drilling Project-Ocean Drilling Program sites: Journal of Geophysical Research, v. 95(B6), June 10, p. 9171-9188.
- Brother, M.P., Robinson, J.Q., and Soukup, W.G., 1990, Detection of fractures in sedimentary rock with conventional borehole geophysics, in 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: Ground Water Management, no. 2, p. 939-952.
- Bryant, T.M., 1989, MWD acoustic and mud resistivity measurements for gas influx detection, paper TS-3-5, in International well control symposium and workshop [November 27-29, Baton Rouge, LA], proceedings: U.S. Minerals Management Service, 36 p.
- Buczak, J.M.J., 1989, FMS, dipmeter, and petrophysics, paper 10, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 25 p.
- Burns, D.R., 1990, Acoustic-waveform logs and the in-situ measurement of permeability--a review, in Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 65-78.
- Burns, D.R., 1991, Predicting relative and absolute variations of in-situ permeability from full-waveform acoustic logs: The Log Analyst, v. 32(3), p. 246-255.
- Butsch, R.J., and Vacca, H.L., 1990, Experimental pulsed-neutron porosity for gas-filled boreholes in the Gulf Coast, SPE-20588, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 619-627.
- Cao, S., and Lerche, I., 1990, Formation pressure estimation: Journal of Petroleum Science and Engineering, v. 4(3), p. 223-233.
- Carlson, N.R., 1991, Profiling gas-water flows in deviated pipe, paper M, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 16 p.
- Carlson, N.R., and Davarzani, M.J., 1990, Profiling horizontal oil/water production, SPE-20591, in SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 653-663. Later published in 1991: Journal of Petroleum Technology, v. 43(7), p. 780-785.

- Carlson, R.L., and Herrick, C.N., 1990, Densities and porosities in the oceanic crust and their variations with depth and age: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9153-9170.
- Carpentier, B., Bessereau, G., and Huc, A.Y., 1989, Well logs and source rocks; assessing organic carbon content by the CARBOLOG technique [in French, English abstract]: *Revue de l'Institut Francais du Petrole*, v. 44(6), November-December, p. 699-719. Later published in 1991 [in English], *The Log Analyst*, v. 32(3), p. 279-297.
- Carroll, J.F., Scott, H.D., Gunn, R.A., and O'Brien, M.S., 1990, Naturally occurring radioactive material logging, SPE-20616, *in* SPE annual technical conference and exhibition, proceedings, v. pi, Production operations and engineering: Society of Petroleum Engineers, p. 35-42.
- Castanier, L.M., 1989, An introduction to computerized X-ray tomography for petroleum research: U.S. Department of Energy Report No. DOE/BC/14126-7, 24 p.
- Catala, G., de Montmollin, V., Hayman, A., Hutin, R., Rouault, G., Guillot, D., Jutten, J., Qureshi, Y., Kelly, B., Piot, B., Simien, T., and Toma I., 1991, Modernizing well cementing design and evaluation: *Schlumberger Oilfield Review*, v. 3(2), April, p. 55-71.
- Chardaire, C., and Roussel, J-C., 1990, NMR imaging of fluid saturation distributions in core samples using a high magnetic field, *in* Worthington, P.F., editor, *Advances in core evaluation, accuracy, and precision in reserves estimation* [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 301-315.
- Chaudhary, S., and Vashist, N., 1991, Formation evaluation of finely laminated reservoir, paper VV, *in* 32nd Annual Logging Symposium Transactions: Society of Professional Well Log Analysts, 24 p.
- Chemali, R., Gianzero, S., and Su, S.M., 1988, The dual laterolog in common complex situations, paper N, *in* 29th annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p. Also published in 1988 as paper U, *in* 11th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Norwegian Chapter, 25 p.
- Chen, S.T., and Eriksen, E.A., 1991, Compressional- and shear-wave logging in open and cased holes using a multipole tool: *Geophysics*, v. 56(4), p. 550-557. Also published in 1991 in abridged form as, Record P- and S-waves in cased or open wellbores: *World Oil*, v. 212(7), p. 85-94.
- Chen, S., and Robbins, R.E., 1991, Characterization of low-permeability dry gas reservoirs in the Arkoma basin, SPE-21852, *in* SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 489-499.
- Chilingarian, G.V., and Vorabuth, P., 1981, Basic concepts of drilling and drilling-fluid technology, chapter 2, *in* Chilingarian, G.V., and Vorabuth, P., editors, *Drilling and drilling fluid*: Elsevier Scientific Publishing Company, Amsterdam, *Developments in Petroleum Science*, No. 11, p. 17-88.
- Chopra, P.N., de Bruyn, C.J., and Mathew, P.J., 1989, Demonstration of a primary calibration of a formation density well-logging tool: *Exploration Geophysics* [Bulletin of the Australian Society of Exploration Geophysicists], v. 20(3), p. 403-410.
- Choudhary, R.N., 1990, Effect of conductive rock matrix on formation resistivity and its measurement, SPE-20302: Society of Petroleum Engineers, unsolicited paper, 16 p.
- Cigni, M., and Magrassi, M., 1990, Radioactive and sonic measures recorded in cased hole—how to use them to quantitatively evaluate the remaining hydrocarbon saturation, paper HH, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 23 p.
- Clark, B., Allen, D.F., Best, D., Bonner, S.D., Jundt, J., Lüling, M.G., and Ross, M.O., 1988, Electromagnetic propagation logging while drilling; theory and experiment, SPE-18117, *in* 1988 SPE annual technical conference proceedings, v. omega, formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 103-117. Later published in 1990, *SPE Formation Evaluation*, v. 5(3), p. 263-271.

- Clark, J.E., 1989, Groundwater flow in deep saline aquifers, *in* International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 151-176.
- Clauss, B., Marquart, G., and Fuchs, K., 1989, Stress orientations in the North Sea and Fennoscandia, a comparison to the central European stress field, *in* Gregersen, S., and Basham, P.W., editors, Earthquakes at North-Atlantic passive margins--neotectonics and postglacial rebound: Kluwer Academic Publishers, Dordrecht, p. 277-287.
- Clavier, C., 1991, The challenge of logging horizontal wells: *The Log Analyst*, v. 32(2), March-April, p. 63-84.
- Clavier, C., Coates, G., and Dumanoir, J., 1977, Theoretical and experimental bases for the dual-water model for interpretation of shaly sands, SPE-6859: Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint 16 p. Reprinted in 1982, *in* Shaly sand reprint volume: Society of Professional Well Log Analysts, p. V5-V20. Later published in 1984, *Society of Petroleum Engineers Journal*, v. 24(2), p. 153-169. Reprinted in 1986, *in* Openhole well logging: Society of Petroleum Engineers, SPE Reprint Series No. 21, p. 357-372. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG, Treatise of Petroleum Geology Reprint Series No. 17, p. 409-424.
- Close, J.C., Mavor, M.J., and McBane, R.A., 1990, Importance, genesis, and recognition of fracture permeability in Fruitland coalbed methane reservoirs of the northern San Juan Basin, Colorado, and New Mexico, paper 90-106, *in* Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 1, 19 p.
- Clow, W.F., 1988, Petrophysical study of Cardium sand and conglomerate, Ferrier field, Alberta: *Canadian Well Logging Society Journal*, v. 16, no. 1, p. 121-155.
- Coates, G.R., and Dumanoir, J.L., 1973, A new approach to improved log-derived permeability, paper R, *in* 14th annual logging symposium transactions: Society of Professional Well Log Analysts. Later published in 1974, *The Log Analyst*, v. 15(1), January-February, p. 17-31. Reprinted in 1986, *in* Openhole well logging: Society of Petroleum Engineers, SPE Reprint Series No. 21, p. 539-551. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 137-151.
- Coates, G.R., and Merrifield, T., 1990, A new approach to incorporating the SP in shaly-sand interpretation, paper P, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 15 p.
- Coleman, M.L., Jones, M.R.O., and Cox, M.A., 1990, Analysis of formation water sampled from core, *in* Buller, A.T., Berg, E., et al., editors, North Sea oil and gas reservoirs II: Graham & Trotman, London, p. 165-171.
- Collett, T.S., and Bird, K.J., 1988, Freezing-point depression at the base of ice-bearing permafrost on the North Slope of Alaska, *in* Senneset, K., editor, 5th international conference on permafrost [August 2-5], proceedings: Tapir Publishers, Trondheim, Norway, v. 1, p. 50-55.
- Collier, H., 1989, A guide to selecting the proper borehole resistivity logging suite, *in* Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 310-324.
- Colson, J.L., 1991, Evaluating gas content of Black Warrior Basin coalbeds from wireline log data: SPE Computer Applications, July-August, p. 15-22.
- Combariza, G., Lau, M., and Bassiouni, Z., 1990, Formation-water resistivity determination from SP log in case of imperfect shale membrane, paper E, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 11 p.

- Connolly, E.T., and Reed, P.A., 1983, Full spectrum formation evaluation: Canadian Well Logging Society Journal, v. 12(1), p. 23-69. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 153-199.
- Cook, P.L., Schneeflock, R.D., Bush, J.D., and Marble, J.C., 1991, Logging anomalies key to 100-bcf, shallow gas play: World Oil, v. 212(9), p. 47-50. Also published in 1991 as, Trimble field, Mississippi--100 BCF of bypassed, low resistivity Cretaceous Eutaw pay at 7,000 ft: Oil and Gas Journal, v. 88(43), October 22, 96-102.
- Cooke-Yarborough, P., and Cull, R., 1990, Integrated fracture-modeling in the Zechstein carbonates, United Kingdom, North Sea, paper MM, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Coope, D.F., 1990, Logging horizontal well bores Using MWD, paper O, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 12 p.
- Cooper, W.G., Kimminau, S., Makin, J., Servadei, F., Stonard, S., and Whattler, P., 1989, Log analysis software review and directory: Society of Professional Well Log Analysts, London Chapter, prepared for 1989 Log analysis software evaluation and review symposium, 15 p. + appendices and tables
- Cornwall, C.K., 1990, Core preservation--an alternative approach, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 79-94.
- Corre, B., 1990, Characterization of fracture networks from well tests using a new analytical solution, SPPE-20533, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 447-56.
- Correia, A., Jones, F.W., and Fricker, A., 1990, Terrestrial heat-flow density estimates for the Jeanne D'Arc Basin, offshore eastern Canada: Geophysics, v. 55 (12), p. 1625-1633.
- Cosmo, C., Spalburg, M.R., and Looyestijn, W.J., 1991, Fast deconvolution of laterologs by direct inverse filtering, paper R, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 12 p.
- Coudeyre, M., Le Goc, B., and Lombez, J.P., 1991, Guiding a horizontal well using geological monitoring: World Oil, v. 212(7), p. 59-64.
- Craig, D.E., 1991, The derivation of permeability-porosity transforms for the H.O. Mahoney lease, Wasson field, Yoakum County, Texas, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 289-314.
- Cramer, D.D., 1991, Stimulating shales, part I--Understanding the reservoir important to successful stimulation; part II--Experience reveals better Bakken stimulation techniques : Oil and Gas Journal, v. 89(16,17), April 22, p. 53-61, April 29, p. 56-61.
- Cramer, D.D., 1991, Stimulation treatments in the Bakken Formation--implications for horizontal completions, in Hanse, W.B., editor, 1991 guidebook to geology and horizontal drilling of the Bakken Formation: Montana Geological Society, 117-140.
- Crary, S., Dennis, B., Denoo, S., et al., 1987, Fracture detection with logs: The Technical Review, v. 35(1), April, p. 22-34. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 444-456.
- Crowder, R.E., Irons, L.A., and Yearsley, E.N., 1990, Economic considerations of borehole geophysics for hazardous waste projects, in Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 37-46.

- Crowder, R.E., Yearsley, E.N., and Irons, L.A., 1989, Monitor well completion evaluation with borehole geophysical density logging, paper B, *in* 3rd international symposium on borehole geophysics for minerals, geotechnical, and groundwater applications, proceedings: Society of Professional Well Log Analysts, Minerals and Geotechnical Logging Society, Chapter-at-Large, p. 3-13. Later published in 1990, *in* Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 349-363.
- Cuddy, S., and Webber, G., 1989, Computer techniques to improve the vertical resolution of the induction log, paper 7, *in* Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 20 p.
- Cuiec, L.E., 1991, Evaluation of reservoir wettability and its effect on oil recovery, chapter 9, *in* Morrow, N.R., editor, Interfacial phenomena in petroleum recovery: Marcel Dekker, Inc., New York, p. 319-375.
- Cunningham, A.B., Bullion, D., and Opstad, E.A., 1990, Use of MWD formation evaluation in the Endicott reservoir, North Slope, Alaska, USA, paper C, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p.
- Cunningham, A.B., and Jay, K.L., 1991, Field experience using the nuclear magnetic logging tool for quantifying microporosity and irreducible water saturation, paper EE, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- Curial, A., 1987, Paleogene saline and hypersaline sedimentation in Bressan (France), a comparison of the log and lithologic data; well log study of the Etrez field and basin synthesis [in French]: Documents des Laboratoires de Géologie, Lyon, no. 100, 192 p.
- Daniels, J.J., 1988, Well logging for engineering and environmental applications, *in* Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 521-568.
- Daniels, J.J., and Keys, W.S., 1990, Geophysical well logging for evaluating hazardous waste sites, *in* Ward, S.H., editor, Geotechnical and environmental geophysics, review and tutorial: Society of Exploration Geophysicists, v. 1, p. 263-284.
- Dankházi, G., Zilahi-Sebess, L., Szongoth, G., Bán, I., Kiss, B., and Tóth, J., 1990, Induced polarization (IP) - a new type of measurement in boreholes, paper J, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p.
- Darling, H., Patten, D., Young, R.A., and Schwarze, L., 1991, Single-well data integration: Schlumberger Oilfield Review, v. 3(3), July, p. 29-34.
- Darr, P.S., Gilkenson, R.H., and Yearsley, E., 1990, Intercomparison of borehole geophysical techniques in a complex depositional environment, *in* 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: Ground Water Management, no. 2, p. 985-1001.
- Dart, R.L., 1990, In situ stress analysis of wellbore breakouts from Oklahoma and the Texas Panhandle: U.S. Geological Survey Bulletin 1866-F, 28 p.
- Davies, A.L., and McManus, D.A., 1990, Geotechnical applications of downhole sonic and neutron logging for surface coal mining: Exploration Geophysics [Australia], v. 21(1-2), p. 73-81.
- Davis, E.E., Horel, G.C., MacDonald, R.D., Villinger, H., Bennett, R.H., and Li, H., 1991, Pore pressures and permeabilities measured in marine sediments with a tethered probe: Journal of Geophysical Research, v. 96(B4), April 10, p. 5975-5984.

- Davis, R.W., 1989, Developments in cross borehole tomography, *in* Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 262-274.
- Dawe, B.A., and Murdock, D.M., 1990, Laminated sands; an assessment of log interpretation accuracy by an oil-base mud coring program, SPE-20542, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 131-142.
- Day, S.N.J., and Petler, J.S., 1990, Tool-motion and borehole environmental effects on MWD neutron porosity, paper A, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 14 p.
- de Lima, O.A.L., and Sharma, M.M., 1990, A grain conductivity approach to shaly sandstones: *Geophysics*, v. 55(10), p. 1,347-1,356.
- Demongodin, L., Vasseur, G., Pinoteau, B., and Gable, R., 1991, Thermal conductivity and well logs; a case study in the Paris Basin: *Geophysical Journal International*, v. 105(3), June, p. 675-691.
- Denisov, S.B., 1990, Determination of dielectric permittivity of rocks, *in* Soviet advances in applied geophysics: A.A. Balkema, Rotterdam, The Netherlands, p. 116-121. [originally appeared in Russian in 1988, *Prikladnaya Geofizika*, n. 119, p. 129-134.]
- Dennis, B., 1990, High-temperature borehole instrumentation developed for the DOE hot dry rock geothermal energy program: *Geothermal Resources Council Bulletin*, v. 19(3), p. 71-81.
- Dennis, B., Standen, E., Georgi, D.T., and Callow, G.O., 1987, Fracture identification and productivity predictions in a carbonate reef complex, SPE-16808, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 579-588. A similar version also published in 1987 as, Fracture identification techniques in carbonates, paper Y, *in* 11th formation evaluation symposium transactions: Canadian Well Logging Society, 27 p. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 277-286.
- Dennis, B., and Van Eeckhout, E., 1990, Well logging results from three geothermal fields in Central America: *Geothermal Resources Council Transactions*, v. 14, part 1, p. 373-378.
- Derek, H., Johns, R., and Pasternack, E., 1990, Comparative study of backpropagation neural network and statistical pattern recognition techniques in identifying sandstone lithofacies, *in* 1990 conference on artificial intelligence in petroleum exploration and production, proceedings: Texas A&M University, College Station, p. 41-49.
- Desbrandes, R., 1990, Interpretation of MWD dual-resistivity measurements--permeability estimate, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 147-157.
- Desbrandes, R., 1990, An overview of measurement while drilling/logging while drilling technology, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 5-46.
- Desbrandes, R., 1990, Invasion diameter and supercharging in time-lapse MWD/LWD logging, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 115-135.
- Desbrandes, R., 1991, Wireline formation testing--a new extended drawdown technique: *Petroleum Engineering International*, v. 63(5), May, p. 40-44.
- Desbrandes, R. and Bassiouni, Z., 1989, In-situ wettability determination in gas reservoirs, SPE-19058, *in* SPE gas technology symposium proceedings: Society of Petroleum Engineers, p. 53-62. Later published in 1990, *SPE Formation Evaluation*, v. 5(4), p. 431-436.

- Desbrandes, R., and Gualdron, J., 1987, In situ rock wettability determination with formation pressure, paper Z, in 28th annual logging symposium transactions: Society of Professional Well Log Analysts, 20 p. Later published in 1988, *The Log Analyst*, v. 29(4), July-August, p. 244-252.
- Dixon, J.R., and Marek, B.F., 1990, The effect of bimodal pore-size distribution on electrical properties of some Middle Eastern limestones, SPE-20601, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 743-750.
- Dixon, M., 1991, Benefits of high resolution computed tomography in core analysis, SCA-9127, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 8 p.
- Domenico, S.N., 1984, Rock lithology and porosity determination from shear and compressional wave velocity: Geophysics, v. 49, p. 1,188-1,195. Later reprinted in 1989, in Nur, A.M., and Wang, Z., editors, Seismic and acoustic velocities in reservoir rocks, v. 1, experimental studies: Society of Exploration Geophysicists Reprint Series No. 10, p. 120-127.
- Dominguez, H., and Perez, G., 1991, Permeability estimation in naturally fractured fields by analysis of Stoneley waves: *The Log Analyst*, v. 32(3), p. 120-128.
- Donaldson, A., and Clydesdale, G.M., 1990, Accurate reservoir evaluation quality core samples—a good starting point, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 35-53.
- Doveton, J.H., 1986, Log analysis of subsurface geology—Concepts and computer methods: John Wiley & Sons, New York, 273 p.
- Doveton, J.H., Charpentier, R.R., and Metzger, E.P., 1990, Three-dimensional trend mapping using gamma-ray well logs, in Lithofacies analysis of the Simpson Group: Kansas Geological Survey Petrophysical Series No. 5, p. 15-34.
- Dowdle, W.L., and Cobb, W.M., 1974, Static formation temperature from well logs—an empirical method, SPE-5036: Society of Petroleum Engineers, 49th annual meeting [Houston] preprint. Later published in 1975: *Journal of Petroleum Technology*, v. 27(11), p. 1326-1330. Reprinted in 1982, Geothermal log interpretation handbook: Society of Professional Well Log Analysts, p. V-61-V-65. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 514-518.
- Draxler, J.K., Lingnau, R., and Wöhrle, T., 1990, Formation Microscanner application in crystalline rocks, paper KK, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Dull, D.W., 1991, Calibrating old, new logs to cores needed for planning CO₂ flood: *Oil and Gas Journal*, v. 89(28), July 15, p. 58-64.
- Dunlap, H.F., and Dorfman, M.H., 1990, Well logging research for the Department of Energy geopressured-geothermal project: *Geothermal Resources Council Transactions*, v. 14, part 1, p. 527-530
- Dunlop, K.N.B., King, G.A., and Breitenbach, E.A., 1988, Monitoring of oil/water fronts by direct measurement, SPE-18271, in SPE annual technical conference and exhibition proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 91-99. Later published in 1991: *Journal of Petroleum Technology*, v. 43(5), p. 596-602.
- Dunn, K.J., Guo, D.S., and Zalman, T.A., 1991, Gas/steam saturation effect on pulsed neutron capture count rates, paper NN, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.

- Eaton, N., 1990, Coring the horizontal hole, *in* Weiner, P.D., and Kastor, R.L., editors, Drilling technology symposium 1990, proceedings: The American Society of Mechanical Engineers, New York, 13th Annual Energy-sources Technology Conference, v. PD-27, p. 65-69.
- Edmundson, H.N., 1988, Archie's law; electrical conduction in clean, water-bearing rock: The Technical Review, v. 36(3), p. 4-13. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 34-43..
- Edmundson, H.N., 1988, Archie II--Electrical conduction in hydrocarbon-bearing rocks: The Technical Review, v. 36(4), October, p. 12-21. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 44-53.
- Edwardson, M.J., Girner, H.M., Parkinson, H.R., Williams, C.D., and Mathews, C.S., 1962, Calculation of formation temperature disturbances caused by mud circulation: Journal of Petroleum Technology, v. 14(4), p. 416-426. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 544-554.
- Ehlig-Economides, C., Ebbs, D., Fetkovich, M., and Meehan, D.N., 1990, Factoring anisotropy into well design: Schlumberger Oilfield Review, v. 2(4), October, p. 24-33.
- Ehlig-Economides, C.A., Joseph, J.A., Ambrose, R.W., Jr., and Norwood, C., 1989, A modern approach to reservoir testing, SPE-19814, *in* SPE annual technical conference and exhibition proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 429-443. Later published in 1990, Journal of Petroleum Technology, v. 42(12), p. 1,554-1,563.
- Ehrlich, R., and Etris, E.L., 1990, Pore types and core physics, paper SCA-9001, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 31 p.
- Ekstrom, M.P., Dahan, C.A., Chen, M., Lloyd, P.M., and Rossi, D.J., 1986, Formation imaging with microelectrical scanning arrays, paper BB, *in* 27th annual logging symposium transactions: Society of Professional Well Log Analysts, 21 p. Later published in 1987, The Log Analyst, v. 28(3), May-June, p. 294-306. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 163-174.
- El Ibiary, O., Shimi, A., el Zayat, M., Ramadan, H., Hostettler, J.E., and Beardmore, D.H., 1991, Modified mud reduces borehole enlargement in Egypt: Oil and Gas Journal, v. 89(7), February 18, p. 44-49.
- El-Sayed, A.A., and El-Dairy, M.D., 1989, Evaluation of some petrophysical parameters for the Lower Cretaceous reservoir rocks, Western Desert, Egypt: Journal of the Geological Society of India, v. 33(5), p. 457-468.
- Elkington, P.A.S., 1981, Wireline logging and coal measures rock strength: University of Nottingham, England, UK, unpublished Ph.D. dissertation, 156 p.
- Elliott, H.W., 1983, Some "pitfalls" in log analysis: The Log Analyst, v. 24(1), p. 10-24. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 122-136.
- Ellis, D.V., 1990, Some insights on neutron measurements: IEEE Transactions on Nuclear Science, v. 37(2), April, p. 959-965.
- Ellis, D.V., 1990, Neutron and Gamma-ray scattering measurements for subsurface geochemistry: Science, v. 250(4977), October 5, p. 82-87.
- Ellis, D., Howard, J., Flaum, C., McKeon, D., Scott, H., Serra, O., Simmons, G., 1988, Mineral logging parameters--Nuclear and acoustic: The Technical Review, v. 36(1), p. 38-52. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 460-474.
- Elphick, R.Y., 1990, Petrophysical software directory '90: Geobyte, v. 5(4), August/September, p. 18-30.

- Elphick, R.Y., 1990, Five minerals plus porosity from three curves: *Geobyte*, v. 5(5), October/November, p. 63-69.
- Elphick, R.Y., 1991, Determining geopressures from resistivity logs: *Geobyte*, v. 6(3), April, p. 48-58.
- Elphick, R.Y., 1991, Petrophysical software directory: *Geobyte*, v. 6(4), August/September, p. 20-30.
- Encheng, J., Yuheng, L., and Chongxuan, L., 1990, A correlation of irreducible-water saturation and permeability, paper D, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 19 p.
- Enderlin, M.B., Hansen, D.K.T., and Hoyt, B.R., 1991, Rock volume—Considerations for relating well log and core data, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., *Reservoir characterization II*: Academic Press, Inc., San Diego, California, p. 278-288.
- Esbensen, K.H., and Martens, H., 1987, Predicting oil-well permeability and porosity from wire-line petrophysical logs; a feasibility study using partial least squares regression [proceedings of the Multivariate Statistical Workshop for Geologists and Geochemists, Ulvik, Norway, June 2-5, 1986]: *Chemometrics and Intelligent Laboratory Systems*, v. 2(1-3), 221-232.
- Estabrook, R.M., 1990, A comprehensive study of dry-steam flowmeter accuracy at the Geysers geothermal field: *Geothermal Resources Council Transactions*, v. 14, part 1, p. 387-394.
- Ethier, V.G., and King, H.R., 1991, Reservoir quality evaluation from visual attributes on rock surfaces—methods of estimation and classification from drill cuttings or cores: *Bulletin of Canadian Petroleum Geology*, v. 39(3), September, p. 233-251.
- Etnyre, L.M., 1990, Estimation of petrophysical parameters using a robust-Marquardt procedure, paper Q, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 20 p.
- Evans, H.B., 1991, Evaluating differences between wireline and MWD systems: *World Oil*, v. 212(4), April, p. 51-61, 136.
- Fanchao, Z., Fengzeng, X., and Jianping, Z., 1989, Grade determination of ore beds by well logging in situ, *in* Ward, S.H., editor, *An overview of exploration geophysics in China—1988*: Society of Exploration Geophysics, p. 447-470.
- Faraguna, J., Chace, D.M., and Schmidt, M.G., 1989, An improved borehole televiewer system—image acquisition, analysis, and integration, paper UU, *in* 30th annual logging symposium transactions: Society of Professional Well Log Analysts, 11 p. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 149-159.
- Feather, G., 1991, A review of formation, cement bond logging, production logging (short course notes): Society of Professional Well Log Analysts, Tulsa Chapter, variously paginated
- Ferenczy, L., Kormos, L., and Szűcs, P., 1990, A new statistical method in well-log interpretation, paper O, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 17 p.
- Fertl, W.H., 1978, How subsurface temperature affects formation evaluation: *Oil and Gas Journal*, v. 76(30), July 24, p. 54-62. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II—log interpretation*: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 508-512.
- Fertl, W.H., 1978, Knowing basic reservoir parameters first step in log analysis, practical log analysis, part 2: *Oil and Gas Journal*, V. 76(21), May 22, p. 98-118. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II—log interpretation*: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 72-79.

- Fertl, W.H., 1985, Logs help approximate reservoir temperature: *Oil and Gas Journal*, v. 83(17), April 29, p. 89-95. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 519-521.
- Fertl, W.H., 1986, Log-derived evaluation of shaly clastic reservoirs, SPE-14061, in 1986 SPE international meeting on petroleum engineering [Beijing, March 17-20], proceedings: Society of Petroleum Engineers. Later published in 1987, *Journal of Petroleum Technology*, v. 39(2), p. 175-194. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 347-366.
- Fertl, W.H., and Chilingar, G.V., 1986, Total organic carbon content determined from well logs, SPE-15612: Society of Petroleum Engineers, 61st annual meeting preprint, 14 p. Later published in 1988, *SPE Formation Evaluation*, v. 3(2), p. 407-419. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 555-567.
- Fertl, W.H., and Chilingarian, G.V., 1981, Drilling through overpressured formations, chapter 16, in Chilingarian, G.V., and Vorabuth, P., editors, *Drilling and drilling fluid: Elsevier Scientific Publishing Company, Amsterdam, Developments in Petroleum Science, No. 11*, p. 581-620.
- Fertl, W.H., and Chilingarian, G.V., 1988, Detection and evaluation of geopressed subsurface formations based on dielectric (electromagnetic wave propagation) measurements: *Energy Sources*, v. 10, p. 195-200.
- Fertl, W.H., and Chilingarian, G.V., 1990, Hydrocarbon resource evaluation in the Woodford Shale using well logs: *Journal of Petroleum Science and Engineering*, v. 4(4), p. 347-357.
- Fertl, W.H., and Chilingarian, G.V., 1990, Type and distribution modes of clay minerals from well logging data: *Journal of Petroleum Science and Engineering*, v. 3, p. 321-332.
- Fertl, W.H., and Leach, W.G., 1990, Formation temperature and formation pressure affect the oil and gas distribution in Tertiary Gulf Coast sediments: *Transactions Gulf Coast Association of Geological Societies*, v. 40, p. 205-216.
- Fertl, W.H., and Nice, S.B., 1990, Well logging and completion technology for horizontal wellbores: *Transactions Gulf Coast Association of Geological Societies*, v. 40, p. 217-226. Also published in 1990 as Nice, S.B., and Fertl, W.H., *New logging, completion techniques boost horizontal well productivity: Petroleum Engineer International*, v. 62(11), p. 20-29. Condensed version published in 1991, as *Logging, completing extended-reach and horizontal wells: World Oil*, v. 212(3), March, p. 49-56.
- Fertl, W.H., Sinha, A.K., and McDougall, J.G., 1988, Advances in complex reservoir evaluation based on geophysical logs: *Canadian Well Logging Society Journal*, v. 16, no. 1, p. 25-45.
- Fett, T., 1991, Fracture evaluation in the Austin Chalk, in Chuber, S., editor, *Austin Chalk exploration symposium, geology, geophysics, and formation evaluation, abstracts and short papers: South Texas Geological Society*, p. 41-49.
- Fialka, B.N., McClanahan, R.K., Robb, G.A. and Longstaffe, F.J., 1990, The evaluation of cyclic steam stimulation in an oil sand reservoir using post-steam core analysis, paper 90-108, in *Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting, preprints v. 3*, 16 p.
- Fialka, B.N., Pyszka, M.H., and Chhina, H.S., 1990, the evaluation of temperature logging in thermal application, SPE-20084, in *SPE California regional meeting proceedings: Society of Petroleum Engineers*, p. 571-580.
- Fielitz, K., and Giesel, W., 1991, Evaluation of groundwater salinity from well logs and conclusions on flow velocities, in De Brueck, W., editor, *Hydrogeology of salt water intrusion [a report of the commission on hydrogeology of salt water intrusion of the International Association of Hydrogeologists]: Verlag Heinz Heise, IAS International Contributions to Hydrogeology*, v. 11, p. 397-411.

- Flaum, C., Holenka, J.M., and Case, C.R., 1989, Eliminating the effect of rugosity from compensated density logs by geometrical response modeling, SPE-19612, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 419-427. Later published in 1991: SPE Formation Evaluation, v. 6(2), p. 252-258.
- Flaum, C., and Theys, P.P., 1991, Geometrical specifications of logging tools—the need for new standards, paper YY, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- Freedman, R., and Grove, G.P., 1988, Interpretation of EPT-G logs in the presence of mudcakes, SPE-18116, *in* 1988 SPE annual technical conference proceedings, v. omega, formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 87-102. Later published in 1990, as Interpretation of ADEPT logs in the presence of mudcakes: SPE Formation Evaluation, v. 5(4), p. 449-457.
- French Oil and Gas Industry Association Technical Committee, 1990, Directional drilling and deviation control technology: Gulf Publishing Company, 138 p.
- French, A., 1990, Horizontal coring using air as the circulating fluid—some prototype studies conducted in G tunnel at the Nevada Test Site from the Yucca Mountain project, *in* Weiner, P.D., and Kastor, R.L., editors, Drilling technology symposium 1990, proceedings: The American Society of Mechanical Engineers, New York, 13th Annual Energy-sources Technology Conference, v. PD-27, p. 59-64.
- Fritsen, A., and Corrigan, T., 1990, Establishment of a geological fracture model for dual porosity simulations on the Ekofisk field, *in* Buller, A.T., Berg, E., et al., editors, North Sea oil and gas reservoirs II: Graham & Trotman, London, p. 173-184.
- Frykman, P., and Stentoft, N., 1989, Diagenetic pore geometry and sound velocity response in Danish Zechstein carbonates, *in* Impariso, G., Firas, M., and Bemtgen, J.M., editors, Hydrocarbons; source of energy [proceeding of the meeting, "Optimization of the production and utilization of hydrocarbons," Lyon, France, September 21-23, 1988]: Graham & Trotman, London, p. 95-103
- Fylling, A., 1991, Estimating conductivity and saturations in the sands of thinly laminated, dipping sand/shale sequences, paper O, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Gadeken, L.L., Ginzel, W.J., Sharbak, D.E., Shorck, K.A., Sitka, M.A., and Taylor, J.L., III, 1991, The determination of fracture orientation using a directional gamma-ray tool, paper AA, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 13 p.
- Gahe, E., Allard, M., Seguin, M.K., and Fortier, R., 1988, Measurements of active layer and permafrost parameters with electrical resistivity, self potential, and induced polarization, *in* Senneset, K., editor, 5th international conference on permafrost [August 2-5], proceedings: Tapir Publishers, Trondheim, Norway, v. 1, p. 148-153.
- Gallagher, J.G., Jr., 1991, Maximum entropy litho-porosity volume fraction predictions from V_p/V_s ratio measurements, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 382-401.
- Gang, X.Z., Golan, M., Sveen, J., 1990, Determining downhole flow rates of oil and gas in oil wells using pressure drop and spinner response measurements, SPE-20893, *in* Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 105-127.
- Gardner, J.S., and Dumanoir, J.L., 1980, Litho-Density Log interpretation, paper N, *in* 21st annual logging symposium transactions: Society of Professional Well Log Analysts, 12 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 397-419.
- Gas Research Institute, 1991, Geological, petrophysical, and engineering analysis of the Frontier Formation; a case study of the Enron South Hogsback 13-8A cooperative well: Chicago, IL, workshop [Denver, CO, April 14] notes, 124 p.

- Gas Research Institute, 1991, Well logging and log analysis, chapter 5, in Executive summary of SFE No. 3; application of advanced technologies in tight gas sandstones, Travis Peak and Cotton Valley Formations: In Focus—Tight Gas Sands, v. 7(1), p. 17-22.
- Gash, B.W., 1991, Measurement of 'rock properties' in coal for coalbed methane production, SCA-9119, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Gatens, J.M., III, Lancaster, D.E., Harrison, C.W., III, and Guidry, F.K., 1988, Using in-situ tests and acoustic logs to determine mechanical properties and stress profiles in the Devonian shales, SPE-18523, in SPE eastern regional meeting, proceedings: Society of Petroleum Engineers, p. 7-20. Reprinted in 1989, Devonian Gas Shales Technology Review, v. 6(1), July, p. 8-24. Later published in 1990, SPE Formation Evaluation, v. 5(3), p. 248-254.
- Gatto, H., and Lauterjung, J., 1990, Quantitative and qualitative determination of minerals in crystalline rocks, paper N, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Georgi, D.T., 1985, Geometrical aspects of borehole televiewer images, paper C, in 27th annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 129-147.
- Georgi, D.T., Heavysege, R.G., Chen, S.T., and Eriksen, E.A., 1989, Application of shear and compressional transit-time data to cased-hole carbonate reservoir evaluation, paper L, in 12th formation evaluation symposium transactions: Canadian Well Logging Society, 24 p. Later published in 1991, The Log Analyst, v. 32(3), p. 129-143.
- Georgi, D.T., Pritchard, D.W., Hemingson, P.A., 1991, Wireline log contributions to the evaluation of the Judy Creek hydrocarbon miscible flood pilot, paper RR, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Gianzero, S., Chemali, R., and Su, S.M., 1990, Induction, resistivity, and MWD tools in horizontal wells, in Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 97-114.
- Givens, W.W., 1991, A dual-porosity, surface, and matrix electrical conduction model for low-contrast resistivity sandstone formations, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 27-51.
- Glanville, C.R., 1990, Evaluation of a lateral-log resistivity-ratio method for application to geological and reservoir modeling of Daqing West Saertu oil sands, People's Republic of China, paper L, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 51 P.
- Glowka, D.A., Loeppke, G.E., Lysne, P.C., and Wright, E.K., 1990, Evaluation of a potential borehole televiewer technique for characterizing lost circulation zones: Geothermal Resources Council Transactions, v. 14, part 1, p. 395-402.
- Goetz, J.F., Seiler, D.D., and Edmiston, C.S., 1990, Geological and borehole features described by the Circumferential Acoustic Scanning Tool, paper Z, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p. Also published in 1990, as paper OSEA-90113, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 1-18.
- Goetz, J.F., Seiler, D.D., and Edmiston, C.S., 1991, Fracture description in the Austin Chalk using CAST images, in Chuber, S., editor, Austin Chalk exploration symposium, geology, geophysics, and formation evaluation, abstracts and short papers: South Texas Geological Society, p. 51-63.

- Gogonenkow, G.N., 1990, Acoustic and density properties of sedimentary sections, chapter 1, in Seismic prospecting for sedimentary formations: A.A. Balkema, Rotterdam, The Netherlands, Russian Translations Series No. 76, p. 6-32.
- Goldberg, D., Broglia, C., and Becker, K., 1991, Fracturing, alteration, and permeability--In-situ properties in hole 735B, chapter 14, in Von Herzen, R.P., Robinson, P.T., et al., editors, Proceedings of the Ocean Drilling Program, scientific results, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 553-556.
- Golovchenko, X., O'Connell, S.B., and Jarrard, R., 1990, Sedimentary response to paleoclimate from downhole logs at Site 693, Antarctic continental margin, in Barker, P.F., Kennett, J.P., O'Connell, S., and Pislak, N.G., editors, Ocean Drilling Program Proceedings, v. 113, scientific results, Weddell Sea, Antarctica: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 239-251.
- Goode, P.A., and Thambynayagam, R.K.M., 1990, Analytic models for a multiple probe formation tester, SPE-20737, in SPE annual technical conference and exhibition, proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 211-224.
- Goodwin, N.H., 1989, The potential application of modern databases to petrophysical software, paper 17, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 22 p.
- Gorbachev, Y.L., 1990, Tying referencing the depth of core drilling intervals to logging data, in Soviet advances in applied geophysics: A.A. Balkema, Rotterdam, The Netherlands, p. 116-121. [originally appeared in Russian in 1988, Prikladnaya Geofizika, n. 119, p. 132-143.]
- Gould, J., Wackler, J., Quirein, J., and Watson, J., 1991, CO₂ monitor logging--east Mallet Unit Slaughter field, Hockley County, Texas, paper PP, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- Graham, P.D., 1989, Advances in downhole corrosion evaluation, in 36th annual short course proceedings: Southwestern Short Course Association, Lubbock, Texas, p. 217-240.
- Greaves, R.J., Beydoun, W.B., and Spies, B.R., 1991, New dimensions in geophysics for reservoir monitoring, SPE-20170: SPE Formation Evaluation, v. 6(2), p. 141-150.
- Grereton, N.R., and McCann, D.M., 1990, A fresh look at predictive equations for compressional wave velocity--porosity, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 270-298.
- Griffin, T.J., Jr., 1991, Extended range particle size distribution using laser diffraction technology--A new perspective, SCA-9126, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 12 p.
- Grove, G.P., and Minerbo, G.N., 1991, An adaptive borehole correction scheme for array induction tools, paper P, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Guest, K., 1990, The use of core-derived quantitative mineralogical data to improve formation evaluation, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 187-209.
- Guidry, F.K., Truman, R.B., Campbell, R.L., and Harrison, C.W., 1988, Devonian shale-specific computation methodology: Gas Research Institute Report No. GRI-88/255, 40 p.

- Gundesø, R., and Grønvold, T., 1990, The impact of thin beds in reservoir characterization from a geological viewpoint, paper M, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 18 p.
- Gunter, J.M., and Moore, C.V., 1986, Improved use of wireline testers for reservoir evaluation, SPE-14063, *in* 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings: Society of Petroleum Engineers, p. 401-413. Later published in 1987, *Journal of Petroleum Technology*, v. 39(6), SPE-16481, p. 634-644. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16*, p. 733-742..
- Guo, G., Friedman, G.M., and Sanders, J.E., 1991, Petrophysical characteristics of selected formations penetrated by the Finnegan boring, southern Washington, County, New York: *Northeastern Geology*, v. 13(1), p. 32-38.
- Gwinner, D.M., Laude, L.S., Olmos, Quirein, J.A., and Reimer, L.J., 1991, Improved reservoir characterization by integration of petrophysics, geology, and core analysis—an example from the Hugoton field, Kansas, paper TT, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- Haack, U., Gohn, E., Bucker, C., and Zoth, G., 1990, Radiogenic heat production measured by laboratory and borehole methods—a comparison: *Scientific Drilling*, v. 1(5), p. 211-216.
- Haas, M.A., 1990, North Sea application of seismic correlative and seismic velocity (ITT) techniques to predict pore pressure, paper 90-10, *in* *Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 3*, 19 p. Also published in 1990 as paper SPE-21558: Society of Petroleum Engineers, unsolicited.
- Habesch, S.M., 1991, Pore geometry evaluation by petrographic image analysis, *in* Gaal, G., and Merriam, D.F., editors, *Computer applications in resource estimation: Pergamon Press, Oxford, England*, p. 301-320.
- Hackbarth, C.J., and Tepper, B.J., 1988, Examination of BHTV, FMS, and SHDT images in very thinly bedded sands and shales, SPE-18118, *in* SPE annual technical conference and exhibition proceedings, v. omega, *Formation evaluation and reservoir geology: Society of Petroleum Engineers*, p. 119-127. Later reprinted in 1990, *in* *Borehole Imaging reprint volume: Society of Professional Well Log Analysts*, p. 307-315.
- Haimin, G., and Renjie, C., 1990, An interpretative method for production well logs in multiphase flow, paper II, *in* *International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter*, 21 p.
- Hall, B.R. and Link, M.R., 1990, Reservoir description of a Miocene turbidite sandstone, Midway-Sunset field, California, Chapter 21, *in* Baarwis, J.H., McPherson, J.G., and Studlick, R.J., editors, *Sandstone petroleum Reservoirs: Springer-Verlag, New York*, p. 509-533.
- Hall, D.J., Walker, J.L., Schmelzl, E.G., and Haène, T.B., 1991, Logging and perforating of horizontal wells—an innovative approach, SPE-21836, *in* *Rocky Mountain regional and low-permeability reservoirs symposium, proceedings: Society of Petroleum Engineers*, p. 307-316.
- Han, D-H., Nur, A., and Morgan, D., 1986, Effects of porosity and clay content on wave velocities in sandstones: *Geophysics*, v. 51(11), November, p. 2093-2107. Discussion and reply published in 1987, *Geophysics*, v. 52(10), October, p. 1439-1441. Later reprinted in 1989, *in* Nur, A.M., and Wang, Z., editors, *Seismic and acoustic velocities in reservoir rocks, v. 1, experimental studies: Society of Exploration Geophysicists Reprint Series No. 10*, p. 128-142.
- Harris, J.M., Tan, H., Lines, L., Pearson, C., Trietel, S., Mavko, G., Moss, D., and Heeksma, R.N., 1990, Cross-well tomographic imaging of geological structures in Gulf Coast sediments, BG2.5, *in* *Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists*, p. 37-40.

- Harrison, A.R., Randall, C.J., Aron, J.B., Morris, C.F., Wignall, A.H., Dworak, R.A., Rutledge, L.L., and Perkins, J.L., 1990, Acquisition and analysis of sonic waveforms from a borehole monopole and dipole source for the determination of compressional and shear speeds and their relation to rock mechanical properties and surface seismic data, SPE-20557, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 267-282
- Harrison, C.W., III, and Dutton, S.P., 1991, Reservoir characterization of the Frontier tight gas sand, Green River basin, Wyoming, SPE-21879, *in* SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 717-725.
- Harrison, W.D., 1991, Permafrost response to surface temperature change and its implications for the 40,000-year surface temperature history at Prudhoe Bay: *Journal of Geophysical Research*, v. 96(B1), January 10, p. 683-695.
- Hartenbaum, B.A., and Rawson, G., 1980, Topical report on subsurface fracture mapping from geothermal wellbores—phase I, pulsed radar techniques, phase II, conventional logging methods, phase 3, magnetic borehole ranging: U.S. Department of Energy Report No. DOE/ET/27013-T1, variously paginated
- Harvey, P.K., Bristow, J.F., and Lovell, M.A., 1990, Mineral transforms and downhole geochemical measurements: *Scientific Drilling*, v. 1(4), p. 163-176.
- Harvey, P.K., Lovell, M.A., and Bristow, J.F., 1991, The interpretation of geochemical logs from the oceanic basement; mineral modelling in Ocean Drilling Program (ODP) hole 735B: *Nuclear Geophysics*, v. 5(3), p. 267-277.
- Hastings, A.F., 1990, Log-derived elemental concentrations to improve the accuracy of fluid saturations determined from well logs: *Nuclear Geophysics*, v. 4(3), p. 305-319.
- Hatzignatiou, D.G., and Reynolds, A.C., 1990, Determination of effective or relative permeability curves from well tests, SPE-20537, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 89-100.
- Hawkins, W.L., Oliver, R.D., and Lavelle, M.J., 1989, Borehole inspection system for large diameter holes: *The Log Analyst*, v. 30(1), p. 26-30. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 47-51.
- Hay, W., Knott, I., and Shiells, G., 1990, Development of coring and electronic data logging system to enhance data quality and quantity facilitating improved oriented core analysis, *in* Worthington, P.F., editor, *Advances in core evaluation, accuracy, and precision in reserves estimation* [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 159-170.
- Hayes, R.G., 1989, An application of pattern recognition principles to the analysis of wireline logs: Oklahoma State University, Stillwater, unpublished Ph.D. dissertation, 173 p.
- Hayman, A.J., Hutin, R., and wright, P.V., 1991, High-resolution cementation and corrosion imaging by ultrasound, paper KK, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Hazlett, W.G., 1990, Correlation of reservoir rock properties in porous media: Texas A&M University, College Station, unpublished Ph.D. dissertation, 92 p.
- Head, E., Howard, A., and Broussard, T., 1990, An introduction to new invasion interpretation parameters, paper H, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 20 p.
- Hélot, D., Etchecopar, A., and Cheung, Ph., 1990, New developments in fracture characterization from logs, *in* Maury, V., Fourmaintraux, D., editors, *Rock at great depth*: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 1471-1478.

- Henry, D.K., Mickelson, B.J., and Ohnstad, D., 1990, Well logging and depth specific sampling in a producing water supply well as an aid in identifying contaminant stratification, in 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: Ground Water Management, no. 2, p. 969-983.
- Henry, W.E., 1990, Accuracy and reliability of electronic instrument core-orientation surveys, SCA-9028, in Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 28 p.
- Hermanrud, C., Cao, S., and Lerche, I., 1990, Estimates of virgin rock temperature derived from BHT (bottom-hole temperature) measurements--bias and error: *Geophysics*, v. 55(7), p. 924-931.
- Hermanrud, C., Meisingset, K.K., and Lerche, I., 1989, Formation temperatures from drillstem tests, SPE-19464: Society of Petroleum Engineers, unsolicited paper, 59 p. Later published in 1991, as Determination of virgin rock temperature from drillstem tests: *Journal of Petroleum Technology*, v. 43(9), p. 1126-1131.
- Herron, S.L., 1986, A total organic carbon log for source rock evaluation, paper HH, in 27th annual logging symposium transactions: Society of Professional Well Log Analysts, 11 p. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 578-585.
- Herron, S.L., and Le Tendre, L., 1990, Wireline source-rock evaluation in the Paris Basin, in Huc, A.Y., Deposition of organic facies: AAPG Studies of Geology No. 30, p. 57-71.
- Hertzog, R.C., and Herron, M.M., 1990, Applications of elemental measurements in geochemical logging, paper DD, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Heslop, A., 1972, Gamma-ray log response of shaly sandstone: *Canadian Well Logging Society Journal*, v. 5(1), p. 29-37. Later published in 1974, paper M, in 15th annual logging symposium transactions: Society of Professional Well Log Analysts. Later published in 1974, *The Log Analyst*, v. 15(5), p. 16-21. Reprinted in 1982, in Shaly sand reprint volume: Society of Professional Well Log Analysts, p. II59-II69. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 324-329.
- Hess, A.E., and Paillet, F.L., 1990, Applications of the thermal-pulse flowmeter in the hydraulic characterization of fractured rocks, in Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 99-112.
- Hester, T.C., Schmoker, J.W., and Sahl, H.L., 1990, Log-derived regional source-rock characteristics of the Woodford Shale, Anadarko basin, Oklahoma: U.S. Geological Survey Bulletin NO. 1866-D, 38 p. Later published in 1990 in abbreviated form, *Oil and Gas Journal*, v.88(49), December 3, p. 73-78.
- Heyesse, D.R., Wu, R.S., and Fletcher, C.R., 1988, Natural fracture identification in the Granite Wash Formation using full wave sonic (FWS) data: *Canadian Well Logging Society Journal*, v. 16, no. 1, p. 7-22.
- Hickman, S.H., Healy, J.H., and Zoback M.D., 1985, In situ stress, natural fracture distribution, and borehole elongation in the Auburn geothermal well, Auburn, New York: *Journal of Geophysical Research*, v. 90(B7), p. 5,497-5,512. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 371-386.
- Hicks, P.J., Jr., Deans, H.A., and Narayanan, K., 1990, Experimental measurement of the distribution of residual oil saturations in heterogeneous carbonate cores using X-ray computerized tomography, paper 90-68, in Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 12 p. Also published in 1990 as paper SPE-21574: Society of Petroleum Engineers, unsolicited.

- Hietala, R.W., 1991, The process and value of petrophysical integration, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 72-102.
- Hietala, R.W., and Connolly, E.T., 1984, Integrated rock-log calibration in the Elmworth Field, Alberta Canada—Part II, Well log analysis methods and techniques, *in* J.A. Masters, editors, Elmworth—case study of a Deep Basin gas field: AAPG Memoir No. 38, p. 215-242. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 261-288.
- Hilchie, D.W., 1987, The geologic well log interpreter: Douglas W. Hilchie, Inc., Boulder, CO, variously paginated
- Hilchie, D.W., 1989, Advanced well log interpretation, 2nd edition: Douglas Hilchie, Inc., Boulder, Colorado, variously paginated.
- Hilchie, D.W., 1990, Wireline: a history of the well logging and perforating business in the oil fields: Douglas W. Hilchie, Inc., Boulder, CO, 200 p.
- Hinds, G.S., and Berg, R.R., 1990, Estimating organic maturity from well logs, Upper Cretaceous Austin chalk, Texas Gulf Coast: Transactions Gulf Coast Association of Geological Societies, v. 40, p. 295-300.
- Hirsche, W.K., Wang, Z., and Sedgwick, G., Seismic monitoring of miscible/immiscible flood, part I—Petrophysical studies, RP2.2 [abs.], *in* Expanded abstracts with biographies, 1990 technical program, : Society of Exploration Geophysicists, v. 1, p. 816-819.
- Hitchner, J.R., MacCallum, G.T., and MacCallum, W.E., 1987, Statistically based well log analysis applied to reservoir studies: Canadian Heavy Oil Association, presented at the 6th Quarterly Meeting. Later published in 1988, Canadian Well Logging Society Journal, v. 16, no. 1, p. 51-80.
- Hoffman, L.J.B., Hooger-Brugge, P.J., and Lomas, A.T., 1989, LOGIX, a knowledge-based system for petrophysical evaluation, paper 11, *in* Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 13 p.
- Holbrook, P., 1990, An accurate rock mechanics approach to pore pressure/fracture gradient prediction, *in* Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 181-196.
- Holcomb, D.L., Reed, D.A., and Conway, M., 1991, How to use tracers to evaluate proppant distribution: Petroleum Engineer International, v. 63(1), January, p. 28-33.
- Hornby, B.E., Murphy, W.F., III, Liu, H-L., and Hsu, K., 1990, Full-waveform-sonic logging in a North Sea reservoir, CH4.6, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 253-257.
- Houyi, L., 1990, Application of resistivity time-lapse logging in Renqiu buried-hill oil pool, paper R, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 20 p.
- Howard, J.J., Kenyon, W.E., and Straley, C., 1990, Proton-magnetic-resonance and pore-size variations in reservoir sandstones, SPE-20600, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 733-742.
- Howard, K.W.F., 1990, Geophysical well logging methods for the detection and characterization of fractures in hard rocks, *in* Ward, S.H., editor, Geotechnical and environmental geophysics, review and tutorial: Society of Exploration Geophysicists, v. 1, p. 287-307.
- Howard, K.W.F., 1990, The role of well logging in contaminant transport studies, *in* Ward, S.H., editor, Geotechnical and environmental geophysics, review and tutorial: Society of Exploration Geophysicists, v. 1, p. 289-301.

- Howard, W.E., and Bolin, J.S., 1988, Improved logging behind casing and technology support for advanced formation evaluation: Gas Research Institute Report No. GRI-88/211, 106 p.
- Hoyer, D., 1991, Evaluation of coalbed fracture porosity from dual laterolog, paper U, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 15 p.
- Hsieh, F.S., and Vega, C.I., 1990, New porosity log equations for borehole containing variable shale volume, SPE-19396: Society of Petroleum Engineers, unsolicited paper, 23 p.
- Huang, Z., and Gradstein, F.M., 1990, Depth-porosity relationship from deep sea sediments: Scientific Drilling 1(4), p.157-162.
- Hunka, J.F., Barber, T.D., Rosthal, R.A., Minerbo, G.N., Head, E.A., Howard, A.Q., Jr., Hazen, G.A., and Chandler, R.N., 1990, A new resistivity measurement system for deep formation imaging and high-resolution formation evaluation, SPE-20559, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 295-307.
- Hunt, E., 1991, Frac height may increase away from well bore: Oil and Gas Journal, v. 89(8), February 25, p. 33-36.
- Hunt, E.R., and Luffel, D.L., 1989, Development of petrophysical techniques for evaluating tight gas sands: Gas Research Institute Report No. GRI-89-103, 193 p. + appendices.
- Hurst, A., and Rosvoll, K.J., 1991, Permeability variations in sandstones and their relationship to sedimentary structures, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 166-196.
- Inderwiesen, P.L., and Lo, T-w., 1990, Cross-hole seismic tomographic imaging of reservoir inhomogeneities in the Midway-Sunset field, California, BG2.1, in Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 22-25.
- Iverson, W.P., 1990, Characterization of a naturally fractured chalk oil reservoir, Silo, Wyoming, CH4.4, in Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 245-248.
- Iverson, W.P., 1990, Permeability estimation from sonic versus porosity gradients, BG5.2, in Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 106-109.
- Jackson, P.D., Lovell, M.A., Pitcher, C., Green, C.A., Evans, C.J., Flint, R., and Forster, A., 1990, Electrical resistivity imaging of core samples, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 365-378. Also published in 1990, as High-resolution electrical resistivity imaging of core samples, paper G, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 9 p.
- Jacobsen, S., moderator, 1991, Log interpretation strategies in gas wells: Schlumberger Oilfield Review, v. 3(2), April, p. 22-34.
- Jacobsen, S.J., Fett, T.H., Singer, J.M., and Ahmed, U., 1991, Horizontal wells--concepts in reservoir evaluation, SPE-21837, in Rocky Mountain regional and low-permeability reservoirs symposium, proceedings: Society of Petroleum Engineers, p. 317-335.
- Jacobsen, T., 1991, Permeability patterns in some fluvial sandstones--An outcrop study from Yorkshire, northeast England, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 315-338.

- Jacobson, L.A., Beals, R., Wyatt, D.F., Jr., and Hrametz, A., 1991, Response characterization of an induced gamma spectrometry tool using a bismuth-germanate scintillator, paper LL, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 18 p.
- Jain, P.K., 1990, Anomalous low resistivity Tipam sands of Assam India and their observed petrophysical aspects, OSEA-90192, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 1-18.
- Jancikovic, B., Duric, Z., Nikolic, B., and Maretic, S., 1990, Computer-processing interpretation method for the incomplete set of logs, and its applications, paper S, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 21 p.
- Jang, L.D., Ku, J.W., and Yeh, Y.H., 1989, Processing and application of the SHDT logging data: *Petroleum Geology of Taiwan*, no. 25, p. 129-147.
- Jarrard, R.D., and Broglia, C., 1991, Geophysical properties of oceanic crust at sites 768 and 770, chapter 6, in Silver, E.A., Rangin, C., von Breymann, M.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 124: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 75-90
- Jarrard, R.D., and Lyle, M., 1991, High-resolution geochemical variations at sites 723, 728, and 731—a comparison of X-ray fluorescence and geochemical logs, chapter 29, in Prell, W.L., Niitusma, N., et al., editors, *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 117: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 473-498.
- Jarrard, R.D., and Schaar, R., 1991, Electrical properties of basalts from sites 768 and 770, chapter 7, in Silver, E.A., Rangin, C., von Breymann, M.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 124: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 91-104.
- Jasti, J., Jesion, G., and Feldkamp, L., 1990, Microscopic imaging of porous media using X-ray computer tomography, SPE-20495, in SPE annual technical conference and exhibition, proceedings, v. omega, *Formation evaluation and reservoir geology*: Society of Petroleum Engineers, p. 269-276.
- Javalagi, M.I., Morriss, S.L., Chenevert, M.E., 1991, Time-lapse resistivity and water-content changes in shale, paper AAA, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p.
- Jian, O., Jieying, W., Xiandi, S., and Fuxing, K., 1990, Log interpretation of an igneous rock formation in Liaodong Bay, paper P, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 20 p.
- Jigeng, Q., Qingjiang, T., and Li, F., 1989, A minicomputer-based differential method of interpretation of gamma-ray logs by a modified deconvolution technique, Ward, S.H., editor, *An overview of exploration geophysics in China--1988*: Society of Exploration Geophysics, p. 409-444.
- Jing, X.D., and Archer, J.S., 1991, An improved Waxman-Smiths model for interpreting shaly sand conductivity at reservoir conditions, paper K, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Jing, X.D., Archer, J.S., and Daltaban, T.S., 1990, The use of synthetic shaly samples for the study of rock electrical properties at reservoir conditions, paper, Z, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 24 p.
- Jinlun, Z., 1990, The application of gas log interpretation in finding fissured mudstone gas pool, paper Y, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 23 p.
- Jirik, L.A., Howard, W.E., and Sadler, D.L., 1991, Identification of bypassed gas reserves through integrated geological and petrophysical techniques—a case study in Seeligson field, Jim Wells County, south Texas, SPE-21483, in SPE gas technology symposium proceedings: Society of Petroleum Engineers, p. 7-16.

- Johnson, A., and Scanlon, M.E., 1989, Pulsed-neutron monitoring in the Bunter sands of the Esmond complex, SPE-19294, *in* SPE offshore Europe conference proceedings: Society of Petroleum Engineers. Later published in 1991: SPE Formation Evaluation, v. 6(3), p. 327-332.
- Johnson, M., Hanes, J., Harman, P., and Pryor, E., 1986, Exploration of deposits, chapter 4, *in* Martin, C.H., editor, Australasian coal mining practice: Australasian Institute of Mining and Metallurgy Monograph Series, No. 12, Victoria, Australia, p. 58-70.
- Johnson, R.A., Bartshe, R.T., 1991, Locating Niobrara Fractures, part I--Using resistivity to assess Niobrara fracture patterns for horizontal wells; part II--Analyzing resistivity, oil production of Niobrara in Wyoming's Silo field: Oil and Gas Journal, v. 89(35) September 2, p. 99-102, 89(36), September 9, p. 68-71.
- Johnston, D.J., 1990, Geochemical logs thoroughly evaluate coalbeds: Oil and Gas Journal, v. 88(52), December 24, p. 45-51.
- Johnston, D.J., Gales, R.H., and Ahmed, U., 1991, A new logging method for enhanced coal grading, SPE-21810, *in* SPE Rocky Mountain regional/low permeability reservoirs symposium, proceedings: Society of Petroleum Engineers, p. 63-70. Also published in 1991 as, Enhanced coal grading with wireline logs, paper 9166, *in* 1991 Coalbed methane symposium proceedings: University of Alabama College of Continuing Studies, p. 107-114.
- Johnston, D.J., and Scholes, P.L., 1991, Predicting cleats in coal seams from mineral and maceral composition with wireline logs, *in* Schwochow, S.D., Murray, D.K., and Fahy, M.F., editors, Coalbed methane of western North America: Rocky Mountain Association of Geologists, Denver, Colorado, p. 123-136.
- Jordan, D.W., Slatt, R.M., Gillespie, R.H., D'Agostino, A.E., and Scheihing, M.H., 1991, Applications of outcrop gamma-ray logging to field development and exploration, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 104-122.
- Jorgensen, D.G., 1990, Estimating water quality from geophysical logs, *in* Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 47-64.
- Joshi, S.D., 1991, Logging, *in* Fritz, R.D., Horn, M.K., and Joshi, S.D., editors, Geological aspects of horizontal drilling: AAPG, Continuing Educations Course Note Series No. 33, p. 471-482.
- Justice, J.H., Mathisen, M.E., Vassiliou, A.A., Singh, Cunningham, P.S., and Bulau, J.R., 1991, Acoustic tomography for reservoir surveillance, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 159-170.
- Jutten, J., and Morriss, S.L., 1990, Cement job evaluation, chapter 16, *in* Nelson, E.B., editor, Well cementing: Elsevier, Amsterdam, Developments in Petroleum Science No. 28, p. 16-1-16-44.
- Kamel, M.H., El-Difrawy, M., Bayoumi, A., and Hosney, H., 1991, Porosity-mechanical properties crossplots; possible indicators of fracture intensity, paper N, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 21 p.
- Kamewada, S., Gi, H.S., Taniguchi, S., and Yoneda, H., 1990, Application of borehole image processing system to survey for tunnels, *in* Barton, N., and Stephansson, O., editors, Rock joints [international symposium on rock joints, June 4-6, 1990, Loen Norway, proceedings]: A.A. Balkema, Rotterdam, The Netherlands, p. 51-58.
- Kaneko, F., Kanemori, T., and Tonouchi, K., 1990, Low-frequency shear-wave logging in unconsolidated formations for geotechnical applications, *in* Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 79-98.

- Karlsen, H.A., and Tjøstheim, D., 1990, Autoregressive segmentation of signal traces with applications to geological dipmeter measurements: *IEEE Transactions on Geoscience and Remote Sensing*, v. 28(2), p. 171-181.
- Katahara, K.W., Kyle, D.G., Siegfried, R.W., Gard, M.F., Goodwill, W.P., Schasteen, T., and Petermann, S.G., 1988, Detection of external pipe defects with a modified borehole televiewer, paper UU, *in* 29th annual logging symposium transactions: Society of Professional Well Log Analysts, 20 p. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 251-263.
- Kate, J.M., and Aggarwal, P.K., 1990, Temperature effects on electrical resistivity of intact sandstones, *in* Price, D.G., editor, 6th international congress International Association of Engineering Geology, proceedings: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 987-994.
- Katsube, T.J., Best, M.E., Murphy, T.B., and Mudford, B.S., 1990, Pore-structure characteristics of low-permeability shales from deep formations, paper SCA-9010, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 20 p.
- Keith, B.D., and Pittman, E.D., 1983, Bimodal porosity in oolitic reservoir--Effect on productivity and log response, Rodessa Limestone (Lower Cretaceous), East Texas Basin: *AAPG Bulletin*, v. 67(9), p. 1391-1399. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 303-311.
- Kenter, J.A.M., 1989, Applications of computerized tomography in sedimentology: *Marine Geotechnology*, v. 8, p. 201-211.
- Kern, C.A., and Schepel, K.J., 1991, Formation evaluation aids application of sequence stratigraphy to optimize production of the Means San Andres unit, Andrews County, Texas, paper SS, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 18 p.
- Kessels, W., 1989, Observation and interpretation of time-dependent behaviour of borehole stability in the Continental Deep Drilling pilot borehole: *Scientific Drilling*, v. 1(3), p. 127-134.
- Keys, W.S., 1988, Borehole geophysics applied to ground-water hydrology: U.S. Geological Survey Open-File Report 87-539, 305 p. Later published in 1989: National Water Well Association, Dublin, Ohio, 313 p. Later published in 1990, Borehole geophysics applied to ground-water investigations: U.S. Geological Survey, Techniques of Water-Resources Investigations, book 2, chapter E2, 150 p.
- Keyser, W., Johnston, L.K., Reeves, R., and Rodriguez, G., 1991, Pore pressure prediction from surface seismic: *World Oil*, v. 212(9), p. 115-124.
- Killeen, P.G., and Elliott, B.E., 1990, Model boreholes for gamma-ray logging: intercalibration of North American and European calibration facilities, paper GG, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 14 p.
- Kimminau, S.J., and Plasek, R.E., 1990, The design of pulsed-neutron reservoir-monitoring programs, SPE-20589, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 629-638.
- King, E.E., and Fertl, W.H., 1978, "Eyeballing" the old electric log, practical log analysis, part 11: *Oil and Gas Journal*, v. 76(45), November 6, p. 66-72. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 64-70.
- Kirchoff-Stein, K.S., Silver, E.A., Moos, D., Barton, C.A., Jarrard, R., 1991, Results of borehole televiewer observations in the Celebes and Sulu Seas, chapter 8, *in* Silver, E.A., Rangin, C., von Breyman, M.T., et al., editors, Proceedings of the Ocean Drilling Program, scientific results, v. 124: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 105-118.

- Kirsch, D., Edgson, J., McDonald, J., and McKenzie, R., 1990, Pulsed neutron capture evaluation of Upper Cretaceous Milk River gas sands, paper 90-74, *in* Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 22 p.
- Kiss, B., Csató, I., and Balla, G., 1990, Compaction-trend analysis of the sediments in the Pannonian Basin, paper AAA, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 14 p.
- Kittridge, M.G., Lake, L.W., Lucia, F.J., and Fogg, G.E., 1989, Outcrop/subsurface comparisons of heterogeneity in the San Andres Formation, SPE-19596, *in* SPE annual technical conference and exhibition, proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 259-273. Later published in 1990, SPE Formation Evaluation, v. 5(3), p. 233-240.
- Klein, J.D., 1991, Induction log anisotropy corrections, paper T, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 21 p.
- Klimentos, T., 1990, Attenuation of P- and S-waves as a method of distinguishing gas from oil and water, BG5.1, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 102-105.
- Kobr, M., 1990, Borehole and petrophysics investigations applied to metallic mineral prospecting in the Zlaté Hory ore district, NW Moravia, Czechoslovakia, paper SS, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 11 p.
- Konstantinov, B.K., and Konstantinov, V.K., 1990, Determination of the weathering ratio by P- and S-wave measurement, *in* Price, D.G., editor, 6th international congress International Association of Engineering Geology, proceedings: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 995-1001.
- Korol'kov, V.N., and Pekshev, V.G., 1990, Geophysical methods for monitoring the construction quality of structures built using jet technology: Soil Mechanics and Foundation Engineering, v. 26(4), p. 143-145.
- Kozhevnikov, D.A., and Khathmullin, I. Ph., 1990, A method of geometrical factors in the theory and interpretation of formation density logging: Nuclear Geophysics, v. 4(4), p. 413-424.
- Krief, M., Garat, J., Stellingwerff, J., and Ventre, J., 1989, A new petrophysical interpretation using the velocities of P- and S-waves (full waveform sonic), paper HH, *in* 12th international formation evaluation symposium transactions: Society of Professional Well Log Analysts, Paris Chapter (SAID), 9 p. Later published in 1990, The Log Analyst, v. 31(6), November-December, p. 355-369.
- Kritikos, W.P., and Kutasov, I.M., 1988, Two-point method for determination of undisturbed reservoir temperature, SPE-15204: SPE Formation Evaluation, v. 3(1), p. 222-226.
- Kulander, B.R., Dean, S.L., and Ward, B.J., Jr., 1990, Fractured core analysis--intepretation, logging, and use of natural and induced fractures in cores: AAPG Methods in Exploration Series No. 8, 88 p.
- Kurkjian, A.L., Lang, S.W., and Hsu, K., 1991, Slowness estimation from sonic logging waveforms: Geoexploration, v. 27, p. 215-256.
- Kuznetsov, V.N., 1989, Petrophysics: Springer-Verlag, Berlin, 375 p.
- LaCoste, L., 1991, A new calibration method for gravity meters: Geophysics, v. 56(5), p. 701-704.
- Laga, P.G., and Vandormael, C., 1990, The use of geophysical well logs in stratigraphy: Tertiary Research, v. 11(2-4), p. 195-203.
- Langford, R.P., Grigsby, J.D. Howard, W.E., Hall, J.D., and Maguregui, J., 1990, Sedimentary facies and petrophysical characteristics of cores from the Lower Vicksburg gas reservoirs, McAllen Ranch field, Hidalgo County, Texas: Transactions Gulf Coast Association of Geological Societies, v. 40, p. 439-450.

- Langseth, M.G., 1990, Cooling of deep sea boreholes by circulation and implications for logging techniques in high temperature holes: *Scientific Drilling*, v. 1(5), p. 231-237.
- Langseth, M.G., Lachenbruch, A.H., and Marshall, B.V., 1990, Geothermal observations in the Arctic region, *in* Grantz, A., Johnson, L., and Sweeney, J.F., editors, *The Arctic Ocean region: The Geological Society of America, The Geology of North America v. L*, p. 133-151.
- Lanza, R.C., McFarland, E.W., and Poulos, G.W., 1991, Computerized neutron tomography for core analysis, SCA-9128, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 12 p.
- Lapointe, Ph., and Karachanian, H., 1990, Sedimentology and diagenesis--basic keys to reservoir layering; example of the Umm Shaif Arab zone C reservoir, SPE-21322: Society of Petroleum Engineers, unsolicited paper, 15 p.
- Larue, D.K., Montgomery, H., and Anderson, R.N., 1990, Drilling Toa Baja, Puerto Rico; preliminary results of drilling into a non-volcanic island arc massif: *Scientific Drilling*, v. 1(6), p. 283-295.
- Lasserre, D., 1990, Formation evaluation in highly-deviated, long reach development wells on the North Rankin gas field, NW Shelf, Australia: APEA [Australian Petroleum Exploration Association] Journal, v. 30, part 1, p. 310-318.
- LaTorraca, G.A., and Hall, C.G., 1991, Observations of rock fabric controls on the electrical properties of sandstones, SCA-9116, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Lau, J.S.O., Auger, L.F., and Bisson, J.G., 1987, Subsurface fracture surveys using a borehole television camera and acoustic televiewer: *Canadian Geotechnical Journal*, v. 24(4), p. 499-508. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 37-46.
- Laubach, S.E., 1989, Fracture analysis of the Travis Peak Formation, western flank of the Sabine Arch, east Texas: Texas Bureau of Economic Geology Report of Investigations No. 185, 55 p.
- Laubach, S.E., Baumgardner, R.W., Jr., Monson, E.R., Hunt, E., and Meador, K.J., 1988, Fracture detection in low-permeability reservoir sandstone--a comparison of BHTV and FMS logs to core, SPE-18119, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 129-139. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 265-275.
- Lawrence, T.D., and Lee, H.S., 1990, Dielectric-log applications in complex lithologies and variable-salinity fluids, paper N, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 15 p.
- Lawrence, T.D., and Mezzatesta, A.G., 1989, Thin-bed analysis using high-resolution measurements, paper 6, *in* Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 13 p.
- Lawrence, T.D., Sinha, A.K., and Fertl, W.H., 1990, U.S. Gulf Coast field experience with thin-bed well log analysis: Transactions Gulf Coast Association of Geological Societies, v. 40, p. 475-483.
- Lawson, D.A., 1991, Interwell geology from geophysical data, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 442-459.
- Leach, W.G., and Fertl, W.H., 1990, The relationship of formation pressure and hydrocarbon temperature to lithology and hydrocarbon distribution in Tertiary sandstones, paper E, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 14 p.
- Leake, J., and Shray, F., 1991, Logging while drilling keeps horizontal well on small target: *Oil and Gas Journal*, v. 89 (38), September 23, 191, p. 53-59.

- Leary, P.C., 1990, Basement rock fracture structure from Cajon Pass, California and Siljan ring, Sweden, Borehole Geophysical Logs, BGP.1, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 153-155.
- Leeder, M., Raiswell, R., Al-Biatty, H., McMahon, A., and Hardman M., 1990, Carboniferous stratigraphy, sedimentation, and correlation of well 48/3-3 in the southern North Sea basin; integrated use of palynology, natural gamma/sonic logs and carbon/sulphur geochemistry: *Journal of the Geological Society of London*, v. 147(2), p. 287-300.
- Leetaru, H.E., 1990, Application of old electric logs in the analysis of Aux Vases Sandstone (Mississippian) reservoirs in Illinois: *Illinois State Geological Survey, Illinois Petroleum* 134, 21 p. Later published in 1991 in abbreviated form as, Analysis of pre-1960 logs can pinpoint pay in Illinois' Aux Vases, other zones, regions: *Oil and Gas Journal*, v. 89(8), February 25, p. 50-52.
- Leetaru, H.E., 1991, Reservoir heterogeneity and improved oil recovery of the Aux Vases (Mississippian) Formation at King field, Jefferson County, Illinois: *Illinois State Geological Survey Report No. IP-135*, 49 p.
- Lehne, K.A., and Aadnøy, B.S., 1990, Quantitative analysis of stress regimes and fractures from logs and drilling records of a North Sea chalk field, paper PP, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 18 p.
- Leitham, R., 1989, Quantifying gas and bitumen saturation of the Elkton and Shunda carbonates in the Seal area, north central Alberta: *Canadian Well Logging Society Journal*, v. 17, no. 1, p. 27-39.
- Lekia, S.D.L., and Evans, R.D., 1990, A water-gas relative permeability relationship for tight gas sand reservoirs: *Journal of Energy Resources Technology*, v. 112, p. 239-245.
- Lerche, I., 1990, Integrated studies of basin analysis in a one-dimensional setting, chapter 5, *in* Basin analysis, quantitative methods, v. 2: Academic Press, inc., New York, p. 208-239.
- Lerche, I., 1990, Formation temperature and heat flux estimates, chapter 3, *in* Basin analysis, quantitative methods, v. 2: Academic Press, inc., New York, p. 60-96.
- Lesage, M., Hall, P., Pearson, J.R.A., and Thiercelin, M.J., 1991, Pore-pressure and fracture-gradient predictions, SPE-21607: *Journal of Petroleum Technology*, v. 43(6), p. 652-654.
- Lewis, D.J., and Perrin, J.D., 1990, Wilcox Formation evaluation—improved procedures for tight-gas sand evaluation, SPE-20570, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 435-444.
- Lewis, J., Williams, A., Enwere, P.M., Archer, J.S., and Taylor, D.G., 1990, Applications of magnetic resonance imaging in special core analysis studies, *in* Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 317-345.
- Li, Y., and Wardlaw, N.C., 1991, Quantitative determination of pore structure from mercury capillary pressure curves, chapter 4, *in* Morrow, N.R., editor, Interfacial phenomena in petroleum recovery: Marcel Dekker, Inc., New York, 101-156.
- Liangxiao, Z., 1990, Determination of the contemporary tectonic-stress direction and its applications in exploring and developing fractured reservoirs, paper T, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 26 p.
- Lippmann, E. Buckner, Ch., Huenges, E., Rauen, A., Wienand, J., Wolter, K., Soffel, H.C., 1989, Rock physical properties; first results of the KTB-field-laboratory: *Scientific Drilling*, v. 1(3), p. 143-149.

- Lishman, J., 1988, A method of treating clay correction in mixed mineral calculations: Canadian Well Logging Society Journal, v. 16, no. 1, p. 83-109.
- Livbjerg, F., and Mjøs, R., 1989, The Cook Formation, an offshore sand ridge in the Oseberg area, northern North Sea, chapter 23, in Collinson, J.D., editor, Correlation in hydrocarbon exploration [Correlation in Hydrocarbon Exploration (Bergen, Norway, October 3-5, 1988), proceedings]: Graham & Totman, London, p. 299-312.
- Lo, T-W., Inderwiesen, P.L., Howlett, D.L., Melton, D.R., Livingston, N.D., Paulsson, B.N.P., and Fairborn, J.W., 1990, McKittrick cross-well seismology project, part II--tomographic processing and interpretation, BG2.3, in Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 30-33.
- Logan, R.B., Schroeder, T.S., and Zoeller, W.A., 1990, Applications of an MWD propagation resistivity and neutron porosity tool, paper B, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 16 p.
- Longeron, D.G., and Yahya, F.A., 1991, Laboratory measurements of cementation factor and saturation exponent under reservoir conditions on Asab reservoir rock samples, SCA-9117, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Lomas, A.T., 1989, An opportunity for change, paper 5, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 9 p.
- Long, R.C., and Mitchell, B.J., 1990, A new approach to directional survey interpretation and course correction by the sectional method, in Weiner, P.D., and Kastor, R.L., editors, Drilling technology symposium 1990, proceedings: The American Society of Mechanical Engineers, New York, 13th Annual Energy-sources Technology Conference, v. PD-27, p. 71-83.
- Longeron, D.G., 1990, Laboratory measurements of capillary and electrical properties of rocks samples at reservoir conditions; effect of some parameters, SCA-9023, in Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 28 p.
- Loren, J.D., Kulha, J.T., Renbarger, K.S., and Sneider, R.M., 1991, Reservoir properties inferred from seismic response in areas with minimal log control, in The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 271-280.
- Lorenz, J.C., and Hill, R.E., 1991, Subsurface fracture spacing; comparison of inferences from slant/horizontal core and vertical core in Mesaverde reservoirs, SPE-21877, in SPE joint Rocky Mountain regional/low permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 705-716.
- Lovell, M.A., Harvey, P.K., and Anderson, R.N., 1990, Geological evaluation using downhole geochemical measurements, paper HH, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 14 p.
- Lovell, M.A., and Jackson, P.D., 1991, Electrical flow in rocks; the application of high resolution electrical resistivity core measurements, paper H, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 13 p.
- Lovell, M., Pezard, P., Harvey, P., 1990, Ultrasonic borehole images of the subsurface crust: Geology Today, v. 6(5), p. 154-156.
- Lucet, N., Rasolofosaon, P.N.J., and Zinzner, B., 1991, Sonic properties of rocks under confining pressure using the resonant bar technique: Journal of the Acoustical Society of America, v. 89(3), p. 980-990.
- Luffel, D.L., and Guidry, F.K., 1989, Core analysis results, comprehensive study wells, Devonian shale: Gas Research Institute Report No. 89-151, 129 p.

- Luffel, D.L., and Guidry, F.K., 1990, New core-analysis methods for measuring reservoir rock properties of Devonian shale, SPE-20571, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 445-452.
- Luffel, D.L., Guidry, F.K., and Curtis, J.B., 1990, Formation evaluation in Devonian shale through application of new core and log analysis methods, SPE-21297, in SPE eastern regional meeting proceedings: Society of Petroleum Engineers, v. 1, p. 293-301.
- Luffel, D.L., Herrington, K.L., and Walls, J.D., 1990, Effect of extraction and drying on flow, capillary, and electrical properties of Travis Peak cores containing fibrous illites, SPE-20725, in SPE annual technical conference and exhibition, proceedings, v. sigma, Reservoir engineering: Society of Petroleum Engineers, p. 131-138.
- Luffel, D.L., Howard, W.E., and Hunt, E.R., 1989, Relationships of permeability, porosity, and overburden stress derived from extensive core analysis data base in the Travis Peak Formation, SPE-19008, in SPE joint Rocky Mountain regional/low permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 729-740. Later published in 1991 as, Travis Peak core permeability and porosity relationships at reservoir stress: SPE Formation Evaluation, v. 6(3), p. 310-318.
- Luthi, S.M., and Banavar, J.R., 1988, Application of borehole images to three-dimensional geometric modeling of eolian sandstone reservoirs, Permian Rotliegende, North Sea: AAPG Bulletin, v. 72(9), p. 1,074-1,089. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 317-332.
- Luthi, S.M., and Souhaite, P., 1990, Fracture apertures from electrical borehole scans: Geophysics, v. 55(7), p. 821-833.
- Lyle, R., 1989, Demonstration of mechanical integrity utilizing radioactive tracer surveys, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 65-73.
- Lysne, P., 1986, Determination of borehole shape by inversion of televiewer data: The Log Analyst, v. 27(3), p. 64-71. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 419-426.
- Lysne, P., and Jacobson, R., 1990, Scientific drilling in hydrothermal terrains: Scientific Drilling, v. 1(4), p. 184-192.
- Lysne, P.C., Worthington, P.F., and Pyle, T.E., 1990, Scientific logging in high-temperature boreholes: Scientific Drilling, v. 1(6), p. 296-299.
- MacAllister, D.J., Miller, K.C., Graham, S.K., and Yang, C-T., 1990, Application of X-ray CT scanning to the determination of gas-water relative permeabilities, SPE-20494, in SPE annual technical conference and exhibition, proceedings, v. gamma, Enhanced oil recovery/general petroleum engineering: Society of Petroleum Engineers, p. 255-267.
- McGregor, K.W., Park, E.I., Sincock, K.J., and Piekenbrock, E.J., 1991, Effective unconsolidated core preservation in the Arctic environment--An aid to accurate reservoir evaluation, SPE-22128, in SPE international Arctic technology conference [May 29-31, Anchorage, Alaska] proceedings: Society of Petroleum Engineers, p. 535-544.
- Mahmood, S.M., Maerefat, N.L., and Chang, M.M., 1988, Laboratory measurements of electrical resistivity at reservoir conditions: U.S. Department of Energy Report NIPER-298, 40 p. Also published in 1988 as SPE-18179, in SPE annual technical meeting and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 705-719. Later published in 1991: SPE Formation Evaluation, v. 6(3), p. 291-300.
- Major, R.P., and Holtz, M.H., 1989, Depositionally and diagenetically controlled reservoir heterogeneity at Jordan field, SPE-19874, in SPE annual technical conference and exhibition, proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 633-640. Later published in 1990, Journal of Petroleum Technology, v. 42(10), p. 1,304-1,309.

- Maloney, D.R., Honarpour, M.M., and Brinkmeyer, A.D., 1990, The effects of rock characteristics on relative permeability: U.S. Department of Energy Report No. NIPER-441, 29 p.
- Maltezos, F., and Anderson, R.N., 1991, Milankovitch cycles in electrical resistivity logs from the Toa Baja scientific drillhole, Puerto Rico: *Geophysical Research Letters*, v. 18(3), p. 517-520.
- Manchon, B., 1990, Theory—Rendering injected subsurface waste non-hazardous as demonstrated by geophysical logs, *in* 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: *Ground Water Management*, no. 2, p. 1017-1031.
- Mandava, S.S., Watson, A.T., and Edwards, C.M., 1990, NMR imaging of saturation during immiscible displacements: *AIChE [American Institute of Chemical Engineering] Journal*, v. 36(11), p. 1680-1686.
- Mansure, A.J., 1991, Parameterizing and block-averaging electrical characteristics of a reservoir—an essential part of electrical/electromagnetic evaluation of production process, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 171-180.
- Mansure, A.J., and Meldau, R.F., 1989, Steam-zone electrical characteristics for geodiagnostic evaluation of steamflood performance, SPE-18797, *in* SPE California regional meeting, proceedings: Society of Petroleum Engineers, p. 499-508. Later published in 1990, *SPE Formation Evaluation*, v. 5(3), p. 241-247.
- Mansure, A.J., Meldau, R.F., and Weyland, H.V., 1990, Field examples of electrical resistivity changes during steamflooding, SPE-20539, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 109-119.
- Mares, S., and Zbofil, A., 1990, Logging in studying hydraulic parameters of aquifers, paper RR, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 13 p.
- Marett, G., and Kimminau, S., 1989, Logs, charts, and computers—the history of log interpretation modelling, *in* Log Analysis Software Evaluation and Review (LASER) Symposium transactions: Society of Professional Well Log Analysts, London Chapter, 31 p. Later published in 1990, *The Log Analyst*, v. 31(6), November-December, p. 335-354.
- Mari, J.L., Wittrisch, C., Goepfer, R., and Spreux, A.M., 1989, Vertical seismic profile in horizontal wells, SPE-19856, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 579-590. Later published in 1990, *Journal of Petroleum Technology*, v. 42(12), 1,486-1,493.
- Marion, D., and Nur, A., 1991, Pore-filling material and its effect on velocity in rocks: *Geophysics*, v. 56(2), p. 225-230.
- Martinez, R.D., Schroeder, J.D., and King, G.A., 1987, Formation pressure prediction with seismic data from the Gulf of Mexico, SPE-16621/OTC-5513, *in* Offshore technology conference proceedings: Society of Petroleum Engineers, v. 3, p. 259-268. Later published in 1991, *SPE Formation Evaluation*, v. 6(1), p. 27-32.
- Masse, P.J., Gosney, T.C., and Long, D.L., 1990, The use of pulsed-neutron capture logs to identify steam breakthrough—case study; South Belridge middle expansion steamflood project, SPE/DOE-20252, *in* SPE/DOE symposium on enhanced oil recovery proceedings: Society of Petroleum Engineers, p. 773-784. Later published in 1991: *SPE Formation Evaluation*, v. 6(3), p. 319-326.
- Mathews, D.M., and Bassiouni, Z., 1984, Resistivity-spontaneous potential crossplot for enhanced interpretation of well logs: *The Log Analyst*, v. 25(4), p. 14-19. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 264-269.

- Matyas, V., 1990, Kuskal technique of formation identification from well logs, paper T, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 13 p.
- Mavor, M., 1991, Guidelines for evaluating coalbed methane reservoir potential, in Coalbed methane workshop [Denver, CO, April 14]: Gas Research Institute, Chicago, IL, 39 p.
- Mavor, M.J., and McBane, R.A., 1990, Formation evaluation of exploration coalbed methane wells, paper CIM/SPE 90-101 [also SPE-21589], in Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 3, 19 p.
- May, A., 1991, Electromagnetic propagation log interpretation on the computer: *Geobyte*, v. 6(3), p. 33-44.
- McCann, D.M., and Forster, A., 1990, Reconnaissance geophysical methods in landslide investigations: *Engineering Geology*, v. 29(1), June, p. 59-78.
- McDougall, J.G., and Howard, M.G., 1989, Advances in borehole imaging with second-generation CBIL [circumferential borehole imaging log] borehole televiewer instrumentation, paper 12, in 28th annual conference proceedings: Ontario Petroleum Institute Inc., Lambeth, Ontario, Canada, 14 p.
- McKeon, D.C., Scott, H.D., Olesen, J.-R., Patton, G.L., and Mitchell, R.J., 1990, Improved method for determining water flow behind casing using oxygen activation, SPE-20586, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 591-603. Later published in 1991: *SPE Formation Evaluation*, v. 6(3), p. 334-342.
- McKeon, D.C., Scott, H.D., and Patton, G.L., 1991, Interpretation of oxygen activation logs for detecting water flow in producing and injection wells, paper BB, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.
- McKinley, R.M., 1989, Temperature and noise logging for noninjection related fluid movement, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 45-63.
- McNamara, L.B., Wardlaw, N.C., and McKellar, M., 1991, Assessment of porosity from outcrops of vuggy carbonate and application to cores: *Bulletin of Canadian Petroleum Geology*, v. 39(3), September, p. 260-269.
- McSwiggen, P.L., 1989, CoReLog--a new device for logging resistivity of drill core and its use in research on carbonaceous metasedimentary rocks, in Graphite in early Proterozoic rocks of east-central Minnesota: Minnesota Geological Survey Report No. 28, p. 59-68.
- Medlin, W.L., and Alhilali, K.A., 1990, Shear wave porosity logging in sands, SPE-20558, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 283-293.
- Meglis, I.L., Engelder, T., Graham, E.K., 1990, The effect of stress-relief on ambient microcrack porosity in core samples from the Kent Cliffs (New York) and Moodus (Connecticut) scientific research borehole: *Tectonophysics*, v. 186(1/2), p. 163-173.
- Mehta, C.H., Radhakrishnan, S., and Srikanth, G., 1990, Segmentation of well logs by maximum-likelihood estimation: *Mathematical Geology*, v. 22(7), p. 853-869.
- Mendelson, J.D., and Toksoz, M.N., 1986, In-situ determination of organic richness in sediments by geophysical logging, in Biogeochemistry of black shales [international workshop, Hamburg, West Germany, May 28-31, 1985]: *Mitteilungen aus dem Geologisch-Palaontologischen Institut der Universität Hamburg*, No. 60, p. 23-36. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 587-600.:

- Meyer, B.L., and Nederlof, M.H., 1984, Identification of source rocks on wireline logs by density/resistivity and sonic transit time/resistivity crossplots: AAPG Bulletin v. 68(2), p. 121-129. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 569-577.
- Miall, A.D., 1990, The stratigraphic principles of sedimentary basin analysis, 2nd edition: Springer-Verlag, New York, p. 74-80.
- Miller, M.N., Paltiel, Z., Gillen, M.E., Granot, J., and Boouton, J.C., 1990, Spin-echo magnetic-resonance logging--porosity and free-fluid index, SPE-20561, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 321-334.
- Miller, W.K., II, Peterson, R.E., Stevens, J.E., Lackey, C.B., and Harrison, C.W., 1991, In-situ stress profiling and prediction of hydraulic fracture azimuth for the Canyon Sands Formation, Sonora and Sawyer fields, Sutton County, Texas, SPE-21848, *in* SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 445-456.
- Mills, W.R., Stromswold, D.C., and Allen, L.S., 1991, Die-away of epithermal neutron capture gamma-rays following a neutron pulse: Nuclear Geophysics, v. 5(1/2), p. 13-20.
- Mills, W.R., Stromswold, D.C., and Allen, L.S., 1991, Advances in nuclear oil well logging: Nuclear Geophysics, v. 5(3), p. 209-227.
- Milne, N.A., and Barr, D.C., 1990, Subsurface fracture analysis, Palm Valley gas field: APEA [Australian Petroleum Exporation Association] Journal, v. 30, part 1, p. 321-341.
- Missman, R.A., and Jameson, J., 1991, An evolving description of a fractured carbonate reservoir--The Lisburne field, Prudhoe Bay, Alaska, SPE-22161, *in* SPE international Arctic technology conference [May 29-31, Anchorage, Alaska] proceedings: Society of Petroleum Engineers, p. 699-718.
- Mitchell, W.K., and Nelson, R.J., 1988, A practical approach to statistical log analysis, paper S, *in* 29th annual symposium transactions: Society of Professional Well Log Analysts, 20 p. Later published in 1991 as, Statistical log analysis made practical: World Oil, v. 212(6), p. 115-119.
- Moake, G.L., 1991, A new approach to determining compensated density and P_g values with a spectral-density tool, paper Z, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Moake, G.L., and Schultz, W.E., 1987, Improved density log lithology identification using a borehole-compensated photoelectric factor, paper FF, *in* 28th annual logging symposium transactions: Society of Professional Well Log Analysts, 22 p. Also published in 1987, *in* 11th formation evaluation symposium transactions, paper Q: Canadian Well Logging Society, 20 p. Also published in 1987, paper IPA-87-22/01, *in* 16th annual convention proceedings: Indonesian Petroleum Association, v. 2, p. 107-125. Later published in 1989 as SPE-17961, *in* SPE Middle East oil technical conference and exhibition [Manama, Bahrain], proceedings: Society of Petroleum Engineers, p. 337-355.
- Molinie, A.J., and Ogg, J.G., 1990, Sedimentation-rate curves and discontinuities from sliding-window spectral analysis of logs: The Log Analyst, v. 31(6), November-December, p. 370-374.
- Montgomery, S., 1990, Horizontal drilling--a survey of domestic case histories: Petroleum Frontiers [Petroleum Information], v. 7(2), 46 p.
- Montgomery, S.L., 1990, Logging horizontal wells, chapter 6, *in* Techniques of horizontal drilling--concepts and consequences: Petroleum Frontiers, v. 7(1), p. 33-36.
- Moore, P.W., and Pearson, R.A., 1989, Logging results, section 1--Production logging results, *in* Parker, R.H., editor, Hot dry rock geothermal energy [phase 2B final report of the Camborne School of Mines Project], v. 1: Pergamon Press, Oxford, p. 559-677.

- Moore, S.D., 1991, Video logging—Your downhole eye: *Petroleum Engineer International*, v. 63(10), p. 22-23.
- Moos, D., and Morin, R.H., 1991, Observations of wellbore failure in the Toa Baja well; implications for the state of stress in the north coast Tertiary basin, Puerto Rico: *Geophysical Research Letters*, v. 18(3), p. 505-508.
- Moos, D., Pezard, P., and Lovell, M., 1990, Elastic wave velocities within oceanic layer 2 from sonic full waveform logs in Deep Sea Drilling Project holes 395A, 418A, and 504B: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9189-9207.
- Moos, D., and Zoback, M.D., 1990, Utilization of observations of well bore failure to constrain the orientation and magnitude of crustal stresses—Application to continental, Deep Sea Drilling Project, and Ocean Drilling Program boreholes: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9305-9325.
- Morin, R.H., 1990, Information on stress conditions in the oceanic crust from oval fractures in a deep borehole: *Geophysical Research Letters*, v. 17(9), p. 1311-1314.
- Morin, R.H., Newmark, R.L., Barton, C.A., and Anderson, R.N., 1990, State of lithospheric stress and borehole stability at Deep Sea Drilling Project site 504B, eastern equatorial Pacific: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 9293-9303.
- Morrow, N.R., 1990, Wettability and its effect on oil recovery, SPE-21621: *Journal of Petroleum Technology*, v.42(12), p. 1,476-1,484.
- Morrow, N.R., Cather, M.E., Buckley, J.S., and Dandge, V., 1991, Effects of drying on absolute and relative permeabilities of low-permeability gas sands, SPE-21880, *in* SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 727-739.
- Morrow, N.R., and Melrose, J.C., 1991, Application of capillary pressure measurements to the determination of connate water saturation, chapter 7, *in* Morrow, N.R., editor, *Interfacial phenomena in petroleum recovery*: Marcel Dekker, Inc., New York, p. 257-287.
- Moser, H., and Drost, W., 1989, Application of single and multiwell techniques in fractured rocks, *in* Isotope techniques in the study of the hydrology of fractured and fissured rocks [advisory group meeting on the application of isotope techniques in the study of the hydrology of fractured and fissured rocks (Vienna, November 17-21, 1986), proceedings]: International Atomic Energy Agency, Vienna, Austria, 223-237.
- Moss, R.M., Pepin, G.P., and Davis, L.A., 1990, Direct measurement of the constituent porosities in a dual-porosity matrix, paper SCA-9003, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 25 p.
- Moss, R.M., and Russo, J.W., 1991, Quantitative determination of secondary porosity using X-ray computed tomography and wireline logs, paper J, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Mouchet, J-P., and Mitchell, A., 1989, Abnormal pressures while drilling: Elf-Aquitaine, Boussens, France, Technical Manual No. 2, 255 p.
- Mullen, J., 1991, Cased hole coal analysis in producing gas wells in the San Juan Basin, paper 9135, *in* 1991 Coalbed methane symposium proceedings: University of Alabama College of Continuing Studies, p. 373-380.
- Mullen, M.J., 1991, Cleat detection in coalbeds using the microlog, *in* Schwochow, S.D., Murray, D.K., and Fahy, M.F., editors, *Coalbed methane of western North America*: Rocky Mountain Association of Geologists, Denver, Colorado, p. 123-136.
- Murphy, K., Wyrdrinski, R., Feldman, D.S., and Miller, R., 1991, Planning and interpreting cement bond logs; implementation of an expert system: *SPE Computer Applications*, July-August, p. 23-25.

- Murphy, W.F., Schwartz, L.M., and Hornby, B., 1991, Interpretation physics of V_p and V_s in sedimentary rocks, paper FF, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Mwenifumbo, C.J., and Blangy, J.P., 1991, Short-term spectral analysis of downhole logging measurements from site 704, chapter 30, in Ciesielski, P.F., Kristoffersen, Y., et al., editors, Proceedings of the Ocean Drilling Program, Scientific Results, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 577-585.
- Mwenifumbo, C.J., and Blangy, J.P., 1991, Stratigraphy, depositional environments, and diagenesis of sediments at site 700 inferred from downhole measurements, chapter 34, in Ciesielski, P.F., Kristoffersen, Y., et al., editors, Proceedings of the Ocean Drilling Program, Scientific Results, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 649-656.
- Myers, M.T., 1991, A saturation interpretation model for the dielectric constant of shaly sands, SCA-9118, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Naiyan, S., and Chengxin, Y., 1990, An approach to interpretation of sedimentary facies by log information, paper J, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 30 p.
- Nelson, P.H., 1990, Borehole magnetometry—detection of a steel liner from a nearby observation borehole: U.S. Geological Survey Open-File Report No. 90-492, 24 p.
- Nelson, R.J., and Mitchell, W.K., 1990, Improved vertical resolution of well logs by resolution matching, paper JJ, in 31st annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p. Later published in 1991: The Log Analyst, v. 32(4), p. 339-349.
- Nerby, G., 1990, A new approach to production log analysis, in Buller, A.T., Berg, E., et al., editors, North Sea oil and gas reservoirs II: Graham & Trotman, London, p. 185-199.
- Newman, J.L., and Corbell, G.W., 1990, Continuous in situ measurements of nitrates and other contaminants utilizing specialized geophysical logging devices, in 4th national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods [May 14-17, Las Vegas, Nevada], proceedings: Ground Water Management, no. 2, p. 953-967.
- Newman, K.R., Corrigan, M., Kehoe, G.P., Douglas, D., and Torre, A.J., 1990, Assisted lift production logging with coiled tubing, OSEA-90142, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 693-703.
- Nice, S.R., and Fertl, W.H., 1990, Logging requirements and completion techniques for extended-reach and horizontal boreholes, paper K, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 17 p.
- Nicolaysen, R., and Svendsen, T., 1991, Estimating the permeability for the Troll field using statistical methods querying a fieldwide database, paper QQ, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 13 p.
- Nielsen, S.B., Balling, N., and Christiansen, H.S., 1990, Formation temperatures determined from stochastic inversion of borehole observations: Geophysical Journal International, v. 101(3), p. 581-590.
- Nieto, J.A., Yale, D.P., and Evans, R.J., 1990, Improved methods for correcting core porosity to reservoir conditions, paper F, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 20 p.

- Nieto, J.A., Yale, D.P., and Evans, R.J., 1990, Core compaction correction—a different approach, *in* Worthington, P.F., editor, *Advances in core evaluation, accuracy, and precision in reserves estimation* [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 139-156.
- Nobes, D.C., Bloomer, S.F., Mienert, J., and Westall, F., 1991, Milankovitch cycles and nonlinear response in the Quaternary record in the Atlantic sector of the Southern Oceans, chapter 29, *in* Ciesielski, P.F., Kristoffersen, Y., et al., editors, *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 551-576.
- Nobes, D.C., Mienert, J., and Dirksen, G.J., 1991, Lithologic control of physical-property interrelationships, chapter 35, *in* Ciesielski, P.F., Kristoffersen, Y., et al., editors, *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 657-669.
- Nobes, D.C., Mienert, J., Mwenifumbo, C.J., and Blangy, J.P., 1991, An estimate of heat flow on the Meteor Rise, site 704, chapter 3, *in* Ciesielski, P.F., Kristoffersen, Y., et al., editors, *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 39-45. Also published in 1991, An estimate of the heat flow on the Meteor Rise, subantarctic South Atlantic: *Journal of Geophysical Research*, v. 96(B4), April 10, p. 5947-5953.
- Nobes, D.C., Mwenifumbo, C.J., Mienert, J., and Blangy, J.P., 1991, The problem of porosity rebound in deep-sea sediment cores—a comparison of laboratory and in-situ physical-property measurements, site 704, Meteor Rise, chapter 38, *in* Ciesielski, P.F., Kristoffersen, Y., et al., editors, *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 114: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 711-716.
- Noblett, B.R., and Howard, L.P., 1991, Using the Circumferential Borehole Imaging Log to identify and orient vertical fractures in the Austin Chalk, *in* Chuber, S., editor, *Austin Chalk exploration symposium, geology, geophysics, and formation evaluation, abstracts and short papers*: South Texas Geological Society, p. 105-109.
- Noblett, B.R., and Lee, H.S., 1990, Detection and orientation of vertical fracture systems using circumferentially propagated acoustic waves, paper S, *in* *International well logging symposium transactions*: Society of Professional Well Log Analysts, Beijing Chapter, 13 p.
- Nolte, C., 1990, Anomalous mechanical well log resistivities in the middle Morrow Sandstones of southeast Colorado, *in* Sonnenberg, S.A., Shannon, L.T., Rader, K., von Drehle, W.F., and Martin, G.W., editors, *Morrow Sandstones of southeast Colorado and adjacent areas*: Rocky Mountain Association of Geologists, Denver, p. 227-231.
- Nover, G., Buntebarth, G., Kern, H., Pohl, I., Pusch, G., Schopper, J.R., Schult, A., Will, G., 1989, Petrophysical investigations on core samples of the KTB: *Scientific Drilling*, V. 1(3), p. 135-142.
- Nystuen, J.P., Knarud, R., Jorde, K., and Stanley, K.O., 1989, Correlation of Triassic to Lower Jurassic sequences, Snorre field and adjacent areas, northern North Sea, chapter 21, *in* Collinson, J.D., editor, *Correlation in hydrocarbon exploration* [meeting on correlation in hydrocarbon exploration (Bergen, Norway, October 3-5, 1988), proceedings]: Graham & Trotman, London, p. 273-289.
- Ølgaard, P.L., 1989, Nuclear log interpretation by first principle, *in* Impariso, G., Frias, M., and Bemtgen, J.M., editors, *Hydrocarbons, source of energy*: Graham & Trotman, London, p. 134-143.
- Ollier, G., and Mathis, B., 1991, Lithologic interpretation from geophysical logs in holes 737B, 738C, 739C, and 742A, chapter 14, *in* Baron, J., Larsen, B. et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 119: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 263-289.
- Olsson, O., and Falk, L., 1989, Borehole radar—a new technique for characterization of rock at great depth, *in* Maury, V., and Fourmaintraux, D., editors, *Rock at great depth* [international symposium on rock mechanics, proceedings], v. 3: A.A. Balkema, Rotterdam, The Netherlands, p. 1229-1234.

- Oltz, D.F., Leetaru, H.E., Seyler, B., and Whitaker, S.T., 1991, An integrated approach to reservoir characterization in the Illinois Basin, in The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 38-60.
- Onaisi, A., Sarda, J.P., and Bouteca, M., 1990, Experimental and theoretical investigation of borehole breakouts, in Hustrulid, W.A., and Johnson, G.A., editors, Rock mechanics contributions and challenges--proceedings of the 31st U.S. symposium: A.A. Balkema, Rotterdam, p. 703-710.
- O'Sullivan, T.P., Kiloh, K.D., Starzer, M.R., and Trevena, A.S., 1991, Conglomerate identification and mapping leads to development success in a mature Alaskan field, SPE-22163, in SPE international Arctic technology conference [May 29-31, Anchorage, Alaska] proceedings: Society of Petroleum Engineers, p. 719-726.
- Osment, P.A., Packer, K.J., Taylor, M.J., Attard, J.J., Carpenter, T.A., Hall, L.D., Nerrod, N.J., and Doran, S.J., 1991, NMR imaging of fluids in porous solids: Philosophical Transactions of the Royal Society of London, Series A, v. 333(1632), p. 441-452.
- Owens, J., and Cockcroft, P., 1990, Sensitivity analysis of errors in reserve evaluations due to core and log measurement inaccuracies, in Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 381-394.
- Owolabi, O.O., Okpobiri, G.A., and Obomanu, I.A., 1990, Prediction of abnormal pressures in the Niger delta basin using well logs, paper 90-75 [also SPE-21575], in Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 15 p.
- Paap, H.J., Nussbaum, T.W., and Supernaw, I.R., 1989, The oxygen activation log; a laboratory evaluation, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 25-43.
- Padgett, M.J., and Nester, D.C., 1991, Fracture evaluation of block P-0315, Point Arguello field, offshore California, using core, outcrop, seismic data, and curved space analysis, in The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 242-268.
- Pages, G., Francisque, J.H., Flaum, C., Yver, J.P., 1990, The impact of utilizing the new CNL transforms and environmental corrections in evaluation of low-porosity dolomite formations, paper EE, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 16 p.
- Paillet, F.L., 1985, Problems in fractured-reservoir evaluation and possible routes to their solution: The Log Analyst, v. 26(6), November-December, p. 26-41. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II--log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 478-489.
- Paillet, F.L., 1989, Analysis of geophysical well logs and flowmeter measurements in boreholes penetrating subhorizontal fracture zones, Lac du Bonnet batholith, Manitoba, Canada: U.S. Geological Survey Water-Resources Investigations Report No. 89-4211, 30 p.
- Paillet, F.L., 1991, Use of geophysical well logs in evaluating crystalline rocks for siting of radioactive-waste repositories: The Log Analyst, v. 32(3), p. 85-107.
- Paillet, F.L., 1991, Qualitative and quantitative interpretation of fracture permeability using acoustic full-waveform logs: The Log Analyst, v. 32(3), p. 256-270.
- Paillet, F.L., 1991, High-resolution flow logging in observation boreholes during hydraulic testing of fractured-rock aquifers, paper L, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 23 p.

- Paillet, F.L., and Goldberg, D., 1991, Acoustic televiwer log images of natural fractures and bedding planes in the Toa Baja borehole, Puerto Rico: *Geophysical Research Letters*, v. 18(3), p. 501-504.
- Paillet, F.L., Hess, A.E., and Morin, R.H., 1990, Estimation of the relative permeability distribution in fractured granitic rocks by means of vertical flow measurements in the Siblingen borehole, Switzerland: U.S. Geological Survey Water-Resources Investigations Report No. 90-4034, 26 p.
- Paillet, F.L., Keys, W.S., and Hess, A.E., 1985, Effects of lithology on televiwer-log quality and fracture interpretation, paper JJJ, *in* 27th annual logging symposium transactions: Society of Professional Well Log Analysts, 30 p. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 99-128.
- Paillet, F.L., and Kim, K., 1985, The character and distribution of borehole breakouts and their relationship to in situ stresses in deep Columbia River basalts: Rockwell Hanford, Richland, Washington, Operations Report RHO-BW-CR-155, December, 27 p. Later published in 1987, *Journal of Geophysical Research*, v. 92(B7), p. 6,223-6,234. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 387-398.
- Paillet, F.L., Zaghloul, E.S., and El Dafer, T., 1990, Application of geophysical well log analysis to characterization of aquifers in the Sinai region, Republic of Egypt: U.S. Geological Survey Water Resources Investigations Report NO. 90-4194, 54 p.
- Palaz, I., 1986, Application of geophysical logs to estimate moisture-content profiles in unsaturated tuff, Yucca, Mountain, Nevada, *in* NWWA conference on characterization monitoring of the vadose (unsaturated) zone, proceedings: National Well Water Association, Dublin, Ohio, p. 424-438.
- Pallatt, N., and Thornley, D., 1990, The role of bound water and capillary water in the evaluation of porosity in reservoir rocks, *in* Worthington, P.F., editor, *Advances in core evaluation, accuracy, and precision in reserves estimation* [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 223-237.
- Palmer, I.D., and Kutas, G.M., 1991, Hydraulic fracture height growth in San Juan basin coalbed, SPE-21811, *in* SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 71-88.
- Palmer, I.D., and Sparks, D.P., 1990, Measurement of induced fractures by downhole television camera in coalbeds of the Black Warrior basin, SPE-20660, *in* SPE annual technical conference and exhibition proceedings, v. pi, Production operations and engineering: Society of Petroleum Engineers, p. 459-472. Later published in 1991: *Journal of Petroleum Technology*, v. 43(3), p. 270-275, 326-328.
- Pardus, Y.C., Conner, J., Schuler, N.R., and Tatham, R.H., 1990, V_p/V_s and lithology in carbonate rocks; a case study in the Scipio trend in southern Michigan, CH1.5, *in* Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 169-172.
- Pariso, J.E., Scott, J.H., Kikawa, E., and Johnson, H.P., 1991, A magnetic logging study of hole 735B gabbros at the Southwest Indian Ridge, chapter 17, *in* Von Herzen, R.P., Robinson, P.T., et al., editors, *Proceedings of the Ocean Drilling Program, scientific results*, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 309-321.
- Paske, W.C., Rao, M.V., Twist, J.R., Mack, S.G., and Spross, R.L., 1990, Theory and implementation of a borehole-caliper measurement made while drilling, SPE-20562, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p.
- Passey, Q.R., Creaney, S., Kulla, J.B., Moretti, F.J., and Stroud, J.D., 1991, A practical model for organic richness from porosity and resistivity logs: *AAPG Bulletin*, v. 74(12), p. 1,777-1,794.

- Pasternack, E.S., and Goodwill, W.P., 1983, Applications of digital borehole televiewer logging, paper X, in 24th annual logging symposium transactions: Society of Professional Well Log Analysts, 12 p. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 427-438.
- Pathak, P., 1990, Impact of fluid-displacement effects on log-inject-log tests, SPE-20590, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 639-652.
- Paul, R.J., 1990, Seismic detection of overpressuring and fracturing; an example from the Qaidam basin, People's Republic of China, CH1.7, in Expanded abstracts with biographies, 1990 technical program, v. 1: Society of Exploration Geophysicists, p. 176-179. Also published in 1990 as paper OSEA-90117, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 33-36.
- Paulsson, B.N.P., 1991, Cross-well seismology—A tool for reservoir geophysics, in Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 460-476.
- Pearce, M.S., 1989, Long-term properties of clay, water-based drilling fluids, in International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 115-132.
- Pearson, R.A., Moore, P.W., Harker, C., and Lanyon, G.W., 1989, Logging results, section 1—proprietary logging results, in Parker, R.H., editor, Hot dry rock geothermal energy [phase 2B final report of the Camborne School of Mines Project], v. 1: Pergamon Press, Oxford, p. 423-558.
- Peeters, M., and Visser, R., 1991, A comparison of petrophysical evaluation packages—LOGIC, FLAME, ELAN, OPTIMA, AND ULTRA: The Log Analyst, v. 32(4), p. 350-357.
- Pelling, R., Harvey, P.K., Lovell, M.A., and Goldberg, D., 1991, Statistical analysis of geochemical logging tool data from hole 735B, Atlantis fracture zone, southwest Indian Ocean, chapter 15, in Von Herzen, R.P., Robinson, P.T., et al., editors, Proceedings of the Ocean Drilling Program, scientific results, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 271-283.
- Peters, E.J., and Hardham, W.D., 1990, Visualization of fluid displacements in porous media using computed tomography imaging: Journal of Petroleum Science and Engineering, v. 4, p. 155-168.
- Pezard, P.A., 1990, Electrical properties of mid-ocean ridge basalt and implications for the structure of the upper oceanic crust in hole 504B: Journal of Geophysical Research, v. 95(B6), June 10, p. 9237-9264.
- Pezard, P.A., Howard, J.J., and Goldberg, D., 1991, Electrical conduction in oceanic gabbros, hole 735B, Southwest Indian Ridge, chapter 18, in Von Herzen, R.P., Robinson, P.T., et al., editors, Proceedings of the Ocean Drilling Program, scientific results, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 323-331.
- Pezard, P., and Lovell, M., 1990, Downhole images; electrical scanning reveals the nature of subsurface oceanic crust: Eos Transactions, v. 71(20), May 15, p. 709, 718.
- Phelps, G.D., 1990, Computation of mud filtrate invasion profiles, paper 90-76, in Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 16 p.
- Phillips, C., DiFoggio, R., and Burleigh, 1991, Extracting information from digital images of core, SCA-9125, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Plumb, R.A., and Hickman, S.H., 1985, Stress-induced borehole elongation—a comparison between the four-arm dipmeter and the borehole televiewer in the Auburn geothermal well: Journal of Geophysical Research, v. 90(B7), p. 5,513-5,521. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 407-415.

- Plumb, R.A., and Luthi, S.M., 1986, Application of borehole images to geologic modeling of an eolian reservoir, SPE-15487: Society of Petroleum Engineers presented at SPE annual technical conference and exhibition, preprint, 11 p. Later published in 1989, SPE Formation Evaluation, v. 3(4), p. 505-514. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 333-343.
- Podio, A.L., and Gregory, A.R., 1990, Ultrasonic velocity and attenuation measurements in water-based drilling muds, in Weiner, P.D., and Kastor, R.L., editors, Drilling technology symposium 1990, proceedings: The American Society of Mechanical Engineers, New York, 13th Annual Energy-sources Technology Conference, v. PD-27, p. 135-140.
- Popta, J.V., Heywood, J.M.T., Adams, S.J., and Bostock, D.R., 1990, Use of borehole gravimetry for reservoir characterization and fluid saturation monitoring, SPE-20896, in Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 151-160.
- Prensky, S.E., 1990, Bibliography of well-log applications, annual update, October 1, 1989--September 1, 1990: The Log Analyst, v. 31, no. 6, p. 395-424.
- Prensky, S.E., 1990, Bibliography of well-log applications, cumulative edition (through 1 September 1990): U.S. Geological Survey Open-File Report 90-637A, 362 p. (microfiche); OF 90-637B, 3 Macintosh-compatible diskettes in Microsoft Word v4.0; OF 90-637C, 2 IBM-PC-compatible diskettes in WordPerfect v5.0. [Contains over 2,700 individual entries.] Also published in 1990, in part, as Appendix II, in Ocean Drilling Program wireline logging manual, 2nd edition: Columbia University, Lamont-Doherty Geological Observatory, Borehole Research Group, New York, 205 p.
- Pugh, V.J., Thomas, D.C., and Gupta, S.P., 1990, Correlations of liquid and air permeabilities for use in reservoir engineering studies, SCA-9012, in Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 15 p.
- Qichen, W., 1990, A study on sedimentary facies of Dongying Formation in fault block Wa-16 by using dip-log data, paper V, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 19 p.
- Quint, E.N.M., 1990, Improving lateral and vertical resolution in geotomography, SPE-20944, in Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 2, p. 79-86.
- Radhakrishna, I, and Rao, T.G., 1990, Evaluation of hydrogeochemical parameters with spontaneous potential logs: Journal of Hydrology, v. 114, p. 245-257.
- Raines, M.G., Jackson, P.D., Evans, C.J., Meldrum, P., and Rainsbury, M., 1989, An evaluation of the resistivity anisotropy of the clays at the Down Ampney fault research site: British Geological Survey Technical Report WE/89/48, 32 p.
- Rajan, R., and Delaney, P., 1991, Reconciliation of log and capillary pressure based water saturation in the Fateh Thamama reservoir, Dubai, paper UU, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 24 p.
- Rambow, F.H.K., 1984, The borehole televiewer--some field examples, paper C, in 25th annual logging symposium transactions: Society of Professional Well Log Analysts, 21 p. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 71-91.
- Ramey, H.J., Jr., 1990, Advances in practical well-test analysis, SPE-20592, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 665-676.
- Rasmus, J.C., and Stephens, D.M.R.G., 1990, Real-time pore pressure evaluation utilizing MWD/LWD measurements and drilling-derived formation strength, SPE-20443, in SPE annual technical conference and exhibition, proceedings, v. delta, Drilling: Society of Petroleum Engineers, p. 403-411.

- Rasmus, J., and Voisin, B., 1990, A framework to estimate pore pressures in real-time, in Measurement while drilling symposium [February 26-27, Baton Rouge], proceedings: Louisiana State University, p. 159-180.
- Rasmussen, K.R., and Bai, W., 1990, Logging in deep water wells in central Jutland, Denmark: Boreas [Norwegian University Press] v. 16(4), p. 393-404.
- Raymer, L.L., Hunt, E.R., and Gardner, J.S., 1980, An improved sonic transit time-to-porosity transform, paper P, in 21st annual logging symposium transactions: Society of Professional Well Log Analysts, 12 p. Reprinted in 1990, in Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I--log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 367-379.
- Rehfeldt, K.R., 1989, Application of the borehole flowmeter method to measure spatially variable hydraulic conductivity at the MADE site, in Conference on new field techniques for quantifying the physical and chemical properties of heterogeneous aquifers, proceedings: National Well Water Association, Dublin, Ohio, p. 419-443.
- Repsold, H., and Mundry, E., 1990, Resistivity master curves for multiple-point resistivity measurements in boreholes: Niedersächsisches Landesamt für Bodenforschung Geowissenschaftliche Gemeinschaftsaufgaben, 311 p.
- ResTech Houston, 1988, Borehole gravity and gradiometry, workshop proceedings: Gas Research Institute Report No. GRI-88195, variously paginated
- ResTech Houston, 1988, Formation evaluation from improved sampling and analysis of mud gas and cuttings, workshop proceedings: Gas Research Institute Report No. GRI-88/201, variously paginated
- ResTech Houston, 1988, Continuous downhole permeability measurements, workshop proceedings: Gas Research Institute Report No. GRI-88/213, variously paginated.
- Rider, M.H., 1991, The geological interpretation of well logs, revised edition: Whittles Publishing, Caithness, Scotland, 175 p.
- Rixon, M.D., Kasperski, B.W., and Morriss, C.E., 1989, Vertical resolution enhancement of the Phasor Induction; applications in western Canada, paper 89-40-77, in Building on 40 years of achievement [annual meeting preprints, v. II]: Petroleum Society of CIM, Calgary, 16 p. Later published in 1990, Journal of Canadian Petroleum Technology, v. 29(5), p. 92-104.
- Robinson, S.G., 1990, Applications for whole-core magnetic susceptibility measurements of deep-sea sediments--Leg 115 results, in Duncan, R.A., Backman, J., Dunbar, R.B., and Peterson, L.C., editors, Ocean Drilling Program Proceedings, v. 115, scientific results, Mascarene plateau: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 239-251.
- Rodriguez, E., Messatesta, A., and Tetzlaff, D., 1989, Determination of statistical confidence intervals for petrophysical formation properties, paper 23, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 16 p.
- Roscoe, A., Stoller, C., Adolph, R.A., Boutemy, Y., Cheeseborough, J.C. III, Hall, J.S., McKeon, D.C., Pittman, D., Seeman, B., and Thomas, S.R., Jr., 1991, A new through-tubing oil-saturation measurement system, SPE-21413, in SPE international Arctic technology conference [May 29-31, Anchorage, AK] proceedings: Society of Petroleum Engineers, p. 83-92
- Rouillac, D., 1990, Active witnessing in cement bond logging, SPE-20927, in Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 413-420.
- Ruhovets, N., 1989, A log analysis technique for evaluating laminated reservoirs in the Gulf Coast area, paper C, in 12th formation evaluation symposium transactions: Canadian Well Logging Society, 23 p. Later published in 1990, The Log Analyst, v. 31(5), September-October, p. 294-303.

- Ruhovets, N., and Wyatt, D.F., 1990, Quantitative monitoring of gas flooding in oil-bearing reservoirs using a pulsed-neutron tool, paper W, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 12 p.
- Runge, R.J., and Runge, K.J., 1991, Obtaining lumped (blocked) well logs by simulated annealing: *The Log Analyst*, v. 32(4), p. 371-378.
- Rutkowski, M.A., and Talyor, R.W., 1990, A geophysical study of the radioactive contamination of the sandstone aquifer of eastern Wisconsin, in FOCUS conference on eastern regional ground water issues, proceedings : Ground Water Management, no. 3, p. 343-357.
- Rübel, H.J., Schepers, R., and Schmitz, D., 1986, High resolution televiwer logs from sedimentary formations, paper GG, in 10th European Formation Evaluation Symposium transactions: Society of Professional Well Log Analysts, Aberdeen Chapter, 15 p. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 291-305.
- Ryseth, A., 1989, Correlation of depositional patterns in the Ness Formation, Oseberg area, chapter 24, in Collinson, J.D., editor, Correlation in hydrocarbon exploration [meeting on correlation in hydrocarbon exploration (Bergen, Norway, October 3-5, 1988), proceedings]: Graham & Totman, London, p. 313-326.
- Saito, H., Shima, H., Toshioka, T., Kaino, S-I., and Ohtomo, H., 1990, A case study of geotomography applied to a detailed investigation of a highway bridge foundation, in Paillet, F.L., and Saunders, W.R., editors, Geophysical applications for geotechnical investigations: American Society for Testing and Material, Philadelphia, ASTM STP-1101, p. 37-46.
- Sams, M., 1991, High-resolution velocity and attenuation logs from long-spaced sonic data: *Geophysics*, v. 56(7), p. 1071-1080
- Sandburg, E.V., Olsson, O.L., Falk, L.R., 1991, Combined interpretation of fracture zones in crystalline rock using single-hole, crosshole tomography and directional borehole-radar data: *The Log Analyst*, v. 32 (3), p. 108-119.
- Sanders, L., Kessler, C., 1990, Techniques for hydrocarbon detection using data from the full wave sonic, in 37th annual short course proceedings: Southwestern Petroleum Short Course Association, Lubbock, Texas, p. 205-210.
- Saxena, V., and Sibbit, A.M., 1990, Deep saturation in low-salinity reservoirs from dual-laterolog quadrature signals, SPE-20560, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 309-320.
- Schimschal, U., 1991, A comparison of stationary and continuous gamma-ray spectral data with cores in granites: U.S. Geological Survey Open-File Report No. OF 91-0101, 22 p.
- Schlumberger, 1974, Reprints of articles from the Technical Review, 1958-1973: Schlumberger EPS Production Engineering, Paris, 2 volumes, 944 p.
- Schlumberger, 1982, Reprints of articles from the Technical Review, 1974-1981: Schlumberger ATL-Technique, Paris, Document No. M-072585, 2 volumes, 640 p.
- Schmidt, P.W., and Anderson, J.C., 1991, Orientation of drill core using paleomagnetism in coal exploration, in 25th Newcastle symposium on advances in the study of the Sydney basin: University of Newcastle, Department of Geology, Newcastle, NSW, Australia, p. 118-121.
- Schmitz, D., Hirschmann, G., Kessels, W., Koh, J., Rohr, C., and Dietrich, H.-G., 1989, Core orientation in the KTB pilot well: *Scientific Drilling*, v. 1(3), p. 150-155.
- Schwanitz, B.J., and Barba, R.E., 1989, Determining injection pressure limits with wireline and testing inputs, in 36th annual short course proceedings: Southwestern Short Course Association, Lubbock, Texas, p. 217-240.

- Schweitzer, J.S., 1991, Nuclear techniques in the oil industry: *Nuclear Geophysics*, v. 5(1/2), p. 65-90
- Scott, H.D., Pearson, C.M., Renke, S.M., McKeon, D.C., and Meisenhelder, J.P., 1991, Applications of oxygen activation for injection and production profiling in the Kuparuk River field, SPE-22130, *in* SPE international Arctic technology conference [May 29-31, Anchorage, Alaska] proceedings: Society of Petroleum Engineers, p. 555-565.
- Scott, H.D., Stoller, C., Roscoe, B.A., Plasek, R.E., and Adolph, R.A., 1991, A new compensated through-tubing carbon/oxygen tool for use in flowing wells, paper MM, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Sen, P.N., 1991, Correspondence between membrane potential and conductivity: *Geophysics*, v. 56(4), p. 461-471.
- Sercombe, W.J., and Anderson, B.R., 1990, Net-pay application from nuclear magnetic resonance, Nugget Sandstone, Wyoming thrust belt, SCA-9026, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 22 p.
- Serra, O., 1987, Wireline logs—geological tool [in French]: *Bulletin de la Société Géologique de France*, series 8, v. 3(7), p. 1,323-1,341.
- Serra, O., and Abbott, H.T., 1980, The contribution of logging data to sedimentology and stratigraphy, SPE-9270: Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint, 19 p. Later published in 1982, *Society of Petroleum Engineers Journal*, v. 22(1), p. 117-131. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 231-249.
- Serra, O., Baldwin, J., Quirein, J., 1980, Theory, interpretation, and practical applications of natural gamma-ray spectroscopy, paper Q *in* 21st annual logging symposium transactions: Society of Professional Well Log Analysts, 30 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16*, p. 297-326.
- Seto, A.C., and Bharatha, S., 1991, Thermal conductivity estimation from temperature logs, SPE-21542, *in* SPE International thermal operations symposium proceedings: Society of Petroleum Engineers, p. 179-186.
- Shamir, G., Zoback, M.D., and Cornet, F.H., 1990, Fracture-induced stress heterogeneity—Examples from the Cajon Pass scientific drillhole near the San Andreas fault, California, *in* Barton, N., and Stephansson, O., editors, *Rock joints [international symposium on rock joints, June 4-6, 1990, Loen Norway, proceedings]: A.A. Balkema, Rotterdam, The Netherlands*, p. 719-724.
- Shanks, T.R., Kwon, B.S., DeVries, M.R., and Wichmann, P.A., 1976, A review of fracture detection with well logs, SPE-6159: Society of Petroleum Engineers, 51st annual meeting [New Orleans] preprint, 17 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17*, p. 491-507.
- Sharma, B., Honarpour, M.M., Jackson, S.R., Schatzinger, R., and Tomutsa, L., 1989, Determining the productivity of a barrier island sandstone deposit from integrated facies analysis based on log and core data and fluid production, SPE-19584, *in* SPE annual technical conference and exhibition, proceedings, v. omega, *Formation evaluation and reservoir geology: Society of Petroleum Engineers*, p. 133-148. Later published in 1990, *SPE Formation Evaluation*, v. 5(4), p. 413-420.
- Sharma, B., and Jackson, S., 1991, A crossplot technique for discrimination of various sandstone facies in barrier island sandstone deposits, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., *Reservoir characterization II: Academic Press, Inc., San Diego, California*, p. 689-694.
- Shen, L.C., 1985, Problems in dielectric-constant logging and possible routes to their solution: *The Log Analyst*, v. 26(6), November-December, p. 14-25. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16*, p. 579-589.

- Shields, T., 1991, Updated program calculates pore pressure, frac gradients: *World Oil*, v. 212(4), p. 41-44.
- Shuying, Z., 1990, Pumping-well annulus-water locator and its application, paper JJ, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 25 p.
- Sillman, S.E., and Neuzil, C.E., 1990, Borehole determination of formation thermal conductivity using a thermal pulse from injected fluid: *Journal of Geophysical Research*, v. 95(B6), June 10, p. 8697-8704
- Silva, C., and Spooner, D., 1991, High resolution induction logging—a comparison with conventional induction as used in thin sands in the Texas Gulf Coast region, paper WW, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 22 p.
- Simms, G.J., and Koopersmith, C.A., 1989, Hydrocarbon type identification using MWD neutron porosity logging; a case study, SPE-19620, *in* SPE annual technical conference and exhibition, proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 495-504.
- Sincock, K.J., Lombos, L., and MacGregor, K.W., 1990, Major advance in sampling and preserving unconsolidated reservoir core, *in* Worthington, P.F., editor, *Advances in core evaluation, accuracy, and precision in reserves estimation* [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 19-33.
- Sinha, A.K., 1990, Advanced formation evaluation concepts of the Well Data System (WDS) for evaluating geothermal reservoirs: *Geothermal Resources Council Transactions*, v. 14, part 1, p. 439-450.
- Sinha, R.S., 1991, Investigations and testing, chapter 4, *in* Sinha, R.S., editor, *Underground structures—design and construction*: Elsevier, Amsterdam, *Developments in Geotechnical Engineering*, No. 59B, p. 92-133.
- Skopec, R.A., 1991, In-situ stress evaluation in core analysis, SCA-9103, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Skopec, R.A., Mann, M.M., Jeffers, D., and Grier, S.P., 1990, Horizontal-core acquisition and orientation for formation evaluation, SCA-9017, *in* Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 32 p. Also published in 1990 as SPE-20418, *in* SPE annual technical conference and exhibition, proceedings, v. delta, drilling: Society of Petroleum Engineers, p. 153-166.
- Slingaard, C., Smestad, P., 1990, Noise and temperature logging used to determine underground blowout flow path, paper U, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 15 p.
- Sneider, R.M., and King, H.R., 1984, Integrated rock-log calibration in the Elsworth Field, Alberta Canada—Part I, reservoir rock detection and characterization, *in* J.A. Masters, editors, *Elsworth—case study of a Deep Basin gas field*, : AAPG Memoir No. 38, p. 205-214. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, *Formation evaluation II—log interpretation*: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 251-260.
- Soeder, D.J., 1990, Assessing tight gas reservoir quality using petrography and core analysis, *in* 1989 international gas research conference, proceedings: Gas Research Institute, Chicago, p. 1537-1545.
- Søndena, E., Bratteli, F., Normann, H.P., Kolltveit, K., 1991, The effect of reservoir conditions and wettability on the capillary pressure curve, SCA-9108, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Sonneland, L., Barkved, O., and Haagenes, O., 1990, Reservoir characterization by seismic classification maps, SPE-20544, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 157-162.

- Spalburg, M.R., 1989, An algorithm for simultaneous deconvolution, squaring, and depth-matching of logging data, paper 21, *in* Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 14 p.
- Sprunt, E.S., 1987, Arun core analysis; special procedures for vuggy carbonates, paper IPA-87-21/04, *in* 16th annual convention proceedings: Indonesian Petroleum Association, Jakarta, v. 2, p. 11-23. Later published in 1989: *The Log Analyst*, v. 30(5), September-October, p. 353-362.
- Sprunt, E.S., Desai, K.P., Coles, M.E., Davis, R.M., and Muegge, E.L., 1991, CT-scan-monitored electrical resistivity measurements show problems achieving homogeneous saturation, SPE-21433: SPE Formation Evaluation, v. 6(2), p. 134-140.
- Standen, E., 1991, Tips for analyzing fractures on electrical wellbore images: *World Oil*, v. 212(4), April, p. 99-117.
- Stead, D., Szczepanik, Z., and MacKintosh, A.D., 1990, Borehole acoustic logging around underground potash mine openings, *in* Price, D.G., editor, 6th international congress International Association of Engineering Geology, proceedings: A.A. Balkema, Rotterdam, The Netherlands, v. 3, p. 1037-1044
- Steffy, D.A., 1991, Abnormal formation pressures in the Navarin Basin, Bering Sea, Alaska: Minerals Management Service Report No. MMS 91-0034, 75 p.
- Steiner, E.A., and Lippus, C.S., 1990, Use of downhole geophysical methods in a geotechnical investigation of the South Shores landslide, Rancho Palos Verdes, California, USA, *in* Hustrulid, W.A., and Johnson, G.A., editors, Rock mechanics contributions and challenges—proceedings of the 31st U.S. symposium: A.A. Balkema, Rotterdam, p. 857-862.
- Stock, J.M., Healy, J.H., Hickman, S.H., and Zoback, M.D., 1985, Hydraulic fracturing stress measurements at Yucca Mountain, Nevada and relationship to the regional stress field: *Journal of Geophysical Research*, v. 90(B10), September 10, p. 8,691-8,706. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 355-370.
- Storms, M.A., 1990, Ocean Drilling Program (ODP) deep sea coring techniques: *Marine Geophysical Researches*, v. 12, p. 109-130.
- Stowell, J.R., 1989, An overview of borehole geophysical methods for solving engineering and environmental problems, *in* Symposium on the application of geophysics to engineering and environmental problems, proceedings: Society of Engineering and Mineral Exploration Geophysicists, Golden, CO, p. 290-309.
- Straley, C., Morriss, C.E., Kenyon, W.E., and Howard, J.J., 1991, NMR in partially saturated rocks: laboratory insights on free fluid index and comparison with borehole logs, paper CC, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 25 p.
- Straub, A., Gros, Y., and Krückel, U., 1990, Structural description by electrical imaging of a borehole in granite, paper LL, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 19 p.
- Sturrock, D.L., Cordell, G.M., Westacott, D.C., and Tizpatrick, D.M., 1991, Technological development synergy--Kisbey, Saskatchewan; a case history, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 373-396.
- Sun, M.Y., 1991, Radiotracer well logging in the petroleum industry in China: *Nuclear Geophysics*, v. 5(1/2), p. 109-115.
- Sutcliff, B., and Sim, D., 1991, Drilling optimized by monitoring BHA dynamics with MWD: *Oil and Gas Journal*, v. 89(12), March 25, p. 41-45.

- Swift, A.E., Swift, T.E., and Aucoin, L.A., 1990, Advanced thermal technology—An exploration lead tool: *Petroleum Review*, v. 44 (525), October, p. 528-530.
- Tabbagh, A., Pozzi, J.P., Alvarez, F., Pocachard, J., Martin, J.P., Pages, G., Gable, R., Lebert, F., and Hutin, R., 1990, Magnetic field and susceptibility logging in GPF3 borehole at Couy (France) between 0 and 3500 m: *Geophysical Journal International*, v. 101(1), p. 81-88.
- Taherian, M.R., Kenyon, W.E., and Safinya, K.A., 1990, Measurement of dielectric response of water-saturated rocks: *Geophysics*, v. 55(12), p. 1530-1541.
- Tao, G., and King, M.S., 1990, An improved acoustic velocities-to-porosity transform for sonic-log interpretation, paper B, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 19 p.
- Taylor, A.E., 1991, Marine transgression, shoreline emergence; evidence in seabed and terrestrial ground temperatures of changing relative sea levels, Arctic Canada: *Journal of Geophysical Research*, v. 96(B4), April 10, p. 6893-6909.
- Taylor, K., and Molz, F., 1990, Determination of hydraulic conductivity and porosity logs in wells with a disturbed annulus: *Journal of Contaminant Hydrology*, v. 5(4), P. 317-332.
- Taylor, M.R., 1989, Prevention or cure—kick avoidance and detection using MWD in an integrated wellsite information management system, paper TS-3-1, *in* International well control symposium and workshop [November 27-29, Baton Rouge, LA], proceedings: U.S. Minerals Management Service, 12 p.
- Taylor, M.R., 1990, Geological evaluation in horizontal wells, OSEA-90188, *in* 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 353-366.
- Taylor, M., and Eaton, N., 1990, Formation evaluation helps cope with lateral heterogeneities: *Oil and Gas Journal*, v. 88(47), November 19, p. 56-66.
- Taylor, T.J., 1983, Interpretation and application of borehole televiewer surveys, paper QQ, *in* 24th annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation I—log evaluation: AAPG Treatise of Petroleum Geology Reprint Series No. 16, p. 591-609.
- Taylor, T.J., 1991, A method for identifying fault related fracture systems using the borehole televiewer, paper JJ, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p.
- Tazioli, G.S., 1989, Nuclear and tracer techniques applied to civil engineering problems in fractured rocks, *in* Isotope techniques in the study of the hydrology of fractured and fissured rocks [advisory group meeting on the application of isotope techniques in the study of the hydrology of fractured and fissured rocks (Vienna, November 17-21, 1986), proceedings]: International Atomic Energy Agency, Vienna, Austria, 253-285.
- Tearpock, D.J., and Bischke, R.E., 1991, Directionally drilled wells and directional surveys, chapter 3, *in* Applied subsurface geological mapping: Prentice Hall, Englewood Cliffs, NJ, p. 21-36.
- Tearpock, D.J., and Bischke, R.E., 1991, Log correlation techniques, chapter 4, *in* Applied subsurface geological mapping: Prentice Hall, Englewood Cliffs, NJ, p. 37-93.
- Telford, W.M., Geldart, L.P., and Sheriff, R.E., 1990, Geophysical well logging, chapter 11, *in* Applied geophysics, 2nd edition: Cambridge University Press, New York, p. 645-699.
- Tenchov, G.G., and Dimitrova, L.V., 1991, Evaluation of the diffusion-adsorption potentials in shaly sands using the dual-water model: *Journal of Petroleum Science and Engineering*, v. 5(2), February, p. 195-200.
- Tessier, B., 1990, Criteria for identification of tidal cycles in wells (cores and dipmeter simulation) [in French]: *Bulletin des Centres de Rescherches Exploration-Production Elf-Aquitaine*, v. 14(2), p. 512-520.

- Tetzlaff, D.M., Rodriguez, E., and Anderson, R.L., 1989, Estimating facies and petrophysical parameters from integrated well data, paper 8, *in* Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 22 p.
- Teufel, L.W., 1991, Influence of lithology and geologic structure on in situ stress—examples of stress heterogeneity in reservoirs, *in* Lake, L.W., Carroll, H.B., Jr., and Wesson, T.C., Reservoir characterization II: Academic Press, Inc., San Diego, California, p. 565-578.
- Theys, P.P., 1991, Log data acquisition and quality control: Éditions Technip, Paris, 330 p.
- Thomas, E.C., and Steiber, S.J., 1975, The distribution of shale in sandstones and its effect upon porosity, paper T, *in* 16th annual logging symposium transaction: Society of Professional Well Log Analysts, 15 p. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 331-345.
- Thomas, M.D., 1989, Selection of log-analysis software—methodology and criteria, paper 4, *in* Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 22 p.
- Thompson, J.C., and Klimo, C.R., 1990, Pulsed-neutron log-interpretation case histories from inland and offshore south Louisiana, SPE-20587, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 605-617.
- Thornhill, J.T., 1990, Injection well mechanical integrity: U.S. Environmental Protection Agency Report No. EPA/625/9-89/007, 132 p.
- Tibbitts, G.A., Reed, M.G., and McCarter, M., 1990, New coring system reduces filtrate invasion, *in* Worthington, P.F., editor, Advances in core evaluation, accuracy, and precision in reserves estimation [Reviewed proceedings of the first Society of Core Analysts European core analysis symposium, May 21-23, London, UK]: Gordon and Breach Science Publishers, New York, p. 55-77.
- Tittman, J., 1990, Shear wave logging with dipoles: Schlumberger Oilfield Review, v. 2(4), p. 9-12.
- Tittman, J., 1991, Finding oil next to salt domes: Schlumberger Oilfield Review, v. 3(1), January, p. 4-7.
- Tittman, J., 1991, Vertical resolution of well logs; recent developments: Schlumberger Oilfield Review, v. 3(3), July, p. 24-28.
- Tobola, D.P., and Holditch, S.A., 1989, Determination of reservoir permeability from repeated induction logging, SPE-19606, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 355-370. Later published in 1991: SPE Formation Evaluation, v. 6(1), p. 20-26.
- Tomutsa, L., and Brinkmeyer, A., 1990, Using image analysis to determine petrophysical properties of reservoir rocks - topical report: U.S. Department of Energy Report No. NIPER-444, 18 p.
- Tomutsa, L., Mahmood, S.M., Brinkmeyer, A., and Honarpour, M., 1990, Application of integrated pore-to-core image analysis to study fluid distribution in reservoir rocks, SPE-20478, *in* SPE annual technical conference and exhibition, proceedings, v. gamma, Enhanced oil recovery/general petroleum engineering: Society of Petroleum Engineers, p. 137-148.
- Torres, D., Strickland, R., and Gianzero, M., 1990, A new approach to determining dip and strike using images, paper JJ, *in* 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 16 p.

- Tosaya, C., and Nur, A., 1982, Effects of diagenesis and clays on compressional velocities in rocks: *Geophysical Research Letters*, v. 9(1), p. Later reprinted in 1989, in Nur, A.M., and Wang, Z., editors, *Seismic and acoustic velocities in reservoir rocks*, v. 1, experimental studies: Society of Exploration Geophysicists Reprint Series No. 10, p. 116-119.
- Towle, G.H., Mueller, T.L., and Whitman, W.W., 1989, The use of laboratory and in-situ measurements of acoustic velocity for seismic modeling: *Canadian Well Logging Society Journal*, v. 17, no. 1, p. 5-24.
- Trouiller, J-C., Delhomme, J-P., Carline, S., and Anxionnaz, H., 1989, Thin-bed reservoir analysis from borehole electrical images, SPE-19578, in SPE Annual Technical Conference and Exhibition Proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 61-72. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 217-228.
- Tsang, C.F., 1988, A borehole fluid-conductivity logging method for the determination of fracture-inflow parameters, in Earth sciences division annual report, 1987: Lawrence Berkeley National Laboratory Report No. 24200, p. 214-218.
- Tsang, C-F., Hufschmied, P., and Hale, F.V., 1990, Determination of fracture inflow parameters with a borehole fluid conductivity logging method: *Water Resources Research*, v. 26(4), p. 561-578.
- Tumer, K., Torres, D., and Chemali, R., 1991, A new algorithm for automatic shoulder bed correction of dual laterolog tools, paper Q, in 32nd Annual Logging Symposium Transactions: Society of Professional Well Log Analysts, 21 p.
- Turvill, J., 1990, A perspective on the future roll of MWD systems, in 37th annual short course proceedings: Southwestern Petroleum Short Course Association, Lubbock, Texas, p. 71-80.
- Vallianat, H.D., 1991, Gravity meter calibration at LaCoste and Romberg: *Geophysics*, v. 56(5), p. 705-711.
- van Baaren, J.P., and Heijnen, W.H.P.M., 1989, The development of an interactive petrophysical evaluation system for MS-DOS personal computers, paper 3, in Log analysis software evaluation and review (LASER) symposium transactions: Society of Professional Well Log Analysts, London Chapter, 14 p.
- van Poelgeest, F., Niko, H., and Medwid, A.R., 1989, Comparison of laboratory and in-situ measurements of waterflood residual oil saturations for the Cormorant field, SPE-19300, in SPE offshore Europe conference proceedings: Society of Petroleum Engineers. Later published in 1991: SPE Formation Evaluation, v. 6(1), p. 39-44.
- van Slyke, G., and Romero, J., 1991, Aquifer data from geophysical logs—Denver Basin, Colorado, basic data report II: Colorado Division of Water Resources, 15 p.
- Vavra, C.L., Scheihing, M.H., and Klein, J.D., 1991, Reservoir geology of the Taylor Sandstone in the Oak Hill field, Rusk County, Texas—integration of petrology, sedimentology, and log analysis for delineation of reservoir quality in a tight gas sand, in The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 130-158.
- Verdur, H., Stinco, L., and Naides, C., 1991, Sedimentological analysis utilizing the circumferential borehole acoustic image, paper II, in 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 19 p.
- Vermes, M., 1990, Dynamic programming technique to estimate the shift of well-log data, paper TT, in 13th European formation evaluation symposium transactions: Society of Professional Well Log Analysts, Budapest Chapter, 11 p.
- Vernik, L., and Nur, A., 1990, Ultrasonic velocity and anisotropy of petroleum source rocks—The Bakken Formation, RPP.2 [abs.], in Expanded abstracts with biographies, 1990 technical program: Society of Exploration Geophysicists, v. 1, p. 845-848.

- Vernik, L., and Zoback, M.D., 1990, Strength anisotropy in crystalline rock—implications for assessment of in situ stresses from wellbore breakouts, *in* Hustrulid, W.A., and Johnson, G.A., editors, Rock mechanics contributions and challenges—proceedings of the 31st U.S. symposium: A.A. Balkema, Rotterdam, p. 841-848.
- Vinegar, H.J., Tutunjian, P.N., Edelstein, W.A., and Roemer, P.B., 1989, ^{13}C NMR of whole cores, SPE-19590, *in* SPE annual technical conference and exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 201-212. Later published in 1991: SPE Formation Evaluation, v. 6(2), p. 183-189.
- Vogelij, H.N.J., Leach, M., and Kapteyn, P., 1990, Multilayer flowmeter testing combined with 3-D field modeling to enhance the Ameland field development, SPE-20897, *in* Europec 90, SPE European petroleum conference [October 22-24, The Hague] proceedings: Society of Petroleum Engineers, v. 1, p. 161-169.
- Von Herzen, R.P., Dick, H.J.B., and Robinson, P.T., 1991, Downhole measurements and physical properties, hole 735B; summary and tectonic relationships, chapter 28, *in* Von Herzen, R.P., Robinson, P.T., et al., editors, Proceedings of the Ocean Drilling Program, scientific results, v. 118: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 553-556.
- Wagoner, J.C., Mitchum, R.M., Campion, K.M., and Rhamanian, V.D., 1990, Siliciclastic sequence stratigraphy in well logs, cores, and outcrops—concepts for high-resolution correlation of time and facies: AAPG Methods in Exploration Series, No. 7, 55 p.
- Walbe, K., and Collart, D., 1991, Use of the borehole television camera and the low-volume flowmeter to identify and measure gas flow in low-permeability formations, SPE-21835, *in* SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 299-306.
- Wallace, M.L., 1990, The identification of natural fractures and their orientations in the Spaberry/Dean Formations in west Texas, *in* 37th annual short course proceedings: Southwestern Petroleum Short Course Association, Lubbock, Texas, p. 227-240.
- Waller, P., and McCormick, T., 1989, A comparison of results of internal mechanical integrity testing of large diameter class I municipal injection wells using both pacers and radioactive tracer methodologies, *in* International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 75-103.
- Wang, Z., Hirsche, W.K., and Sedgwick, G., 1990, Seismic monitoring of water floods? A petrophysical study, RP2.1 [abs.], *in* Expanded abstracts with biographies, 1990 technical program: Society of Exploration Geophysicists, v. 1, p. 811-815.
- Wang, Z., Hirsche, W.K., and Sedgwick, G., 1990, Seismic velocities in carbonate rocks, paper 90-71, *in* Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 2, 21 p.
- Wang, Z., and Nur, A., 1986, Effect of temperature on wave velocities in sands and sandstones with hydrocarbons, SPE-15645: Society of Petroleum Engineers, 61st annual meeting [New Orleans] preprint, 8 p. Also published in 1986, *in* Expanded abstracts with biographies, 1986 technical program [Houston]: Society of Economic Geophysicists, p. 3-5. Later published in 1988, SPE Reservoir engineering, v. 3(1), p. 158-164. Later reprinted in 1989, *in* Nur, A.M., and Wang, Z., editors, Seismic and acoustic velocities in reservoir rocks, v. 1, experimental studies: Society of Exploration Geophysicists Reprint Series No. 10, p. 188-194.
- Wafra, M., 1989, Downhole casing corrosion and interpretation techniques to evaluate corrosion in multiple casing strings, SPE-17931, *in* SPE Middle East oil technical conference and exhibition [Manama, Bahrain] proceedings: Society of Petroleum Engineers, p. 55-66. Later published in 1991: SPE Production Engineering, v. 6(3), p. 283-290.
- Watson, A.T., and Mudra, J., 1991, Characterization of Devonian shales with X-ray computed tomography, SCA-9122, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 12 p.

- Watson, J.T., Carpenter, W.W., Carroll, J.F., and Smith, B.C., 1990, Gravel pack field examples of a new pulsed neutron activation logging technique, OTC-6464, *in* Offshore technology conference proceedings, v. 4: Society of Petroleum Engineers, p. 351-356.
- Waxman, M.H., and Smits, L.J.M., 1967, Electrical conductivities in oil-bearing shaly sands, SPE-1863-A: Society of Petroleum Engineers, 42nd annual meeting [Houston] preprint, 16 p. Later published in 1968, Society of Petroleum Engineers Journal, v. 8(2), p. 107-122. Reprinted 1971, *in* Well Logging: Society of Petroleum Engineers, Reprint Series No. 1, p. 101-116. Reprinted 1982, *in* Shaly sand: Society of Professional Well Log Analysts, Reprint v., p. V145-V160. Reprinted 1986, *in* Openhole well logging: Society of Petroleum Engineers, SPE Reprint Series No. 21, p. 315-330. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 367-382.
- Weakley, R.R., 1990, Determination of formation pore pressures in carbonate environments from sonic logs, paper 90-9, *in* Technology in the 90's; prospering in a changing environment: Petroleum Society of CIM/SPE international technical meeting preprints v. 1, 19 p.
- Weakley, R.R., 1991, Use of surface seismic data to predict formation pore pressure worldwide, SPE-21752, *in* SPE western regional meeting proceedings: Society of Petroleum Engineers, p. 37-42.
- Weaver, P.P.E., and Schulteiss, P.J., 1990, Current methods for obtaining, logging, and splitting marine sediment cores: Marine Geophysical Researches, v. 12, p. 85-100.
- Weiss, J.S., 1987, Determining dissolved-solids concentrations in mineralized ground water of the Gulf Coast aquifer systems using electric logs, *in* Vecchioli, J., and Johnson, A.I., editors, Regional aquifer systems of the United States, aquifers of the Atlantic and Gulf Coastal Plain: American Water Resources Association, Bethesda, MD, Monograph Series No. 9, p. 139-150.
- Wenli, K., Jiahua, W., and Yuanhua, Y., 1990, Geological well-log analysis for subtle reservoirs in Anse area, paper X, *in* International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 18 p.
- Wetzel, A., Williams, C., Kassens, H., Leger, G., and Auroux, C., 1990, Comparison between laboratory-determined physical properties and downhole measurements in outer Bengal fan deposits, chapter 30, *in* Cochran, J.R., Stow, D.A.V., editors, Proceedings of the Ocean Drilling Program, scientific results, v. 116: Texas A&M University, Ocean Drilling Program, College Station, Texas, p. 369-374.
- Whitehead, W.S., Junt, E.R., and Holditch, S.A., 1987, The effects of lithology and reservoir pressure on the in-situ stresses in the Waskom (Travis Peak) field, SPE/DOE-16403, *in* SPE/DOE low permeability reservoirs symposium, proceedings: Society of Petroleum Engineers, p. 139-152.
- Whittaker, A., 1991, Mud logging handbook: Prentice-Hall, Englewood Cliffs, NJ, 531 p.
- Wiesneneck, J.B., 1989, Practical experience with oxygen activation logging in south Mississippi, *in* International symposium on class I and II well technology [Dallas, Texas, May 9-11], proceedings: Underground Injection Practices Council, Oklahoma City, OK, p. 7-24
- Wilhelm, H., 1990, A new approach to the borehole temperature relaxation method: Geophysical Journal International, v. 103(2), p. 469-481.
- Williams, C.F., and Anderson, R.N., 1990, Thermophysical properties of the earth's crust—In situ measurements from continental and ocean drilling: Journal of Geophysical Research, v. 95(B6), June 10, p. 9189-9207.
- Williams, T.M., 1987, Measuring behind casing water flow, paper IPA-87-23/17, *in* 16th annual convention proceedings: Indonesian Petroleum Association, Jakarta, v. 2, p. 153-165.

- Willis, G.B., 1991, Estimating fracture height from gamma-ray spectroscopy of radioactive tracers; a case study, SPE-21833, *in* SPE joint Rocky Mountain regional meeting and low-permeability reservoirs symposium proceedings: Society of Petroleum Engineers, p. 275-285.
- Wilson, R.E., Branco, J.E.R., van Heyst, B.G., and Turner, R.H., 1991, Sole Pit—improving the performance of a tight gas reservoir, an integrated approach, *in* The integration of geology, geophysics, petrophysics, and petroleum engineering in reservoir delineation, description, and management [proceeding of the first Archie conference, Houston, Texas, October 22-25, 1990]: AAPG, Tulsa, OK, p. 424-435.
- Wilt, M., and Ranganayaki, R.P., 1990, Surface-to-borehole electromagnetic logging for enhanced oil recovery (EOR) applications, EM3.1 [abs.], *in* Expanded abstracts with biographies, 1990 technical program: Society of Exploration Geophysicists, v. 1, p. 532-534.
- Withjack, E.M., Graham, S.K., and Yang, C-T., 1990, Determination of heterogeneities and miscible displacement characteristics in corefloods by CT scanning, SPE-20490, *in* SPE annual technical conference and exhibition, proceedings, v. gamma, Enhanced oil recovery/general petroleum engineering: Society of Petroleum Engineers, p. 213-224.
- Woessner, D.E., Gleeson, J.W., and Jordan, C.F. Jr., 1990, NMR imaging of pore structures in limestones, SPE-20493, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 19-25.
- Wolfsburger, R.T., Welychka, E.P., and Standen, E.J.W., 1988, Formation MicroScanner applications in southwestern Ontario, *in* 27th annual conference transactions: Ontario Petroleum Institute, London, Ontario, Canada, p. 22 p. Later published in 1990 as, Formation MicroScanner applications in the study of subsurface Paleozoic carbonate rocks; southwestern Ontario, Canada: Carbonates and Evaporites, v. 5(2), p. 123-140.
- Wong, S.A., 1989, Automatic feature detection from wellbore images: Texas A&M University, unpublished Ph.D. dissertation, 190 p.
- Wong, S.A., Startzman, R.A., and Kuo, T-B., 1989, Enhancing borehole image data on a high-resolution PC, SPE-19124, *in* SPE petroleum computer conference proceedings: Society of Petroleum Engineers, p. 37-48. Later reprinted in 1990, *in* Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 443-455.
- Wood, K.N., Tang, J.S., and Luckasavitch, R.J., 1990, Interwell residual oil saturation at Leduc miscible pilot, SPE-20543, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 143-155.
- Woodhouse, R., Opstad, E.A., and Cunningham, A.B., 1991, Vertical migration of invaded fluids in horizontal wells, paper A, *in* 32nd annual logging symposium transactions: Society of Professional Well Log Analysts, 20 p.
- Woofter, D.M., and MacGillivray, J., 1990, Brassey Canada; development of an aeolian sands—a team approach; SPE-20546, *in* SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 163-174.
- Worthington, P.F., 1985, The evolution of shaly-sand concepts in reservoir evaluation: The Log Analyst, v. 26(1), p. 23-40. Reprinted in 1990, *in* Foster, N.H., and Beaumont, E.A., editors, Formation evaluation II—log interpretation: AAPG Treatise of Petroleum Geology Reprint Series No. 17, p. 425-442.
- Worthington, P.F., 1991, The direction of petrophysics—a five-year perspective: The Log Analyst, v. 32(2), p. 57-62.
- Worthington, P.F., 1991, Effective integration of core and log data, SCA-9102, *in* 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 15 p.
- Worthington, P.F., and Johnson, P.W., 1987, Quantitative evaluation of hydrocarbon saturation in shaly freshwater reservoirs, paper IPA 87-22/06, *in* 16th annual convention proceedings: Indonesian Petroleum Association, Jakarta, v. 2, p. 127-152. Later published in 1991: The Log Analyst, v. 32(4), p. 358-370.

- Worthington, P.F., and Pallatt, N., 1990, Effect of variable saturation exponent upon the evaluation of hydrocarbon saturation, SPE-20538, in SPE annual technical conference exhibition proceedings, v. omega, Formation evaluation and reservoir geology: Society of Petroleum Engineers, p. 101-108.
- Wyatt, D.F., Jr., 1991, Compensation for borehole effects and porosity determination with the Thermal Multigate Decay log, SPE-21661, in SPE production operations symposium proceedings: Society of Petroleum Engineers, p. 277-286.
- Xu, H., and Desbrandes, R., 1991, Formation evaluation using in-situ measurements of formation thermal properties: The Log Analyst, v. 32(3), p. 144-157.
- Xue, L., and Galloway, W.E., 1990, High-resolution log-derived genetic stratigraphic sequence profile of the Paleogene section, central Texas Gulf Coast, in Sequence stratigraphy as an exploration tool; concepts and practices in the Gulf Coast [11th annual research conference, Gulf Coast Section, December 2-5]: Society for Sedimentary Geology (SEPM), Tulsa, OK, p. 399-408.
- Yearsley, E.N., and Crowder, R.E., 1990, Acoustic spectrum analysis of borehole sonic logs for engineering properties and fracture characterization; a case history, in 26th annual symposium on engineering geology and geotechnical engineering proceedings: Idaho State University, Pocatello, Idaho, 14 p.
- Yearsley, E.N., Crowder, R.E., and Irons, L.A., 1991, Monitoring well completion evaluation with borehole geophysical density logging: Ground Water Monitoring Review, v. 11(1), p. 103-111.
- Yearsley, E.N., LoCoco, J.J., and Crowder, R.E., 1990, Borehole geophysics applied to fracture hydrology, in FOCUS conference on eastern regional ground water issues, proceedings : Ground Water Management, no. 3, p. 255-267.
- Yerkes, R.F., Levine, P., and Wentworth, C.M., 1990, Abnormally high fluid pressures in the region of the Coalinga earthquake sequence and their significance, chapter 13, in Rymer, M.J., and Ellsworth, W.L., editors, The Coalinga, California, earthquake of May 2, 1983: U.S. Geological Survey Professional Paper 1487, p. 235-257.
- Ying, L., 1990, An experimental study on NLL for monitoring reservoirs, paper GG, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 21 p.
- Yuan, H.H., 1991, Salinity dependence of shaly sand parameters for membrane potential measurements, SCA-9115, in 5th annual technical conference proceedings: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, 26 p.
- Yuan, L.-P., 1990, Pore image characterization and its relationship to permeability, paper SCA-9002, in Annual technical conference preprints: Society of Professional Well Log Analysts, Society of Core Analysts Chapter-at-Large, v. 3, v. 2, 18 p.
- Yuecai, W., 1990, Improvement on the interpretation method of shaly sand with perfect Q_v , paper A, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 21 p.
- Zavoiskii, V.N., and Ivashchenko, I.N., 1990, Algorithms for core sample orientation by remnant magnetism: Geophysical Journal v. 9(5), p. 653-667. [original Russian paper published in 1987]
- Zemanek, J., Glenn, E.E., Norton, L.J., and Caldwell, R.L., 1970, Formation evaluation by inspection with the borehole televiewer: Geophysics, v. 35, p. 254-269. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 55-70.
- Zhao, J.Q., Liu, J.S., Ni, H.F., Liu, D., Wuru, G.S., Guo, T.C., Wu, Y., and Liu, J.L., 1991, Neutron capture gamma-ray spectral well logging using a ^{252}Cf -HPGe probe: Nuclear Geophysics, v. 5(1/2), p. 123-129.

- Zhigao, W., 1990, A new approach to oil-saturation equations for log interpretation of oil-based mud and pressured-coring data in Jiyang Depression, paper H, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 19 p.
- Zhongliang, W., 1990, Application of probabilistic-statistical model in well logging, paper M, in International well logging symposium transactions: Society of Professional Well Log Analysts, Beijing Chapter, 15 p.
- Zimmerman, T., MacInnis, J., Hoppe, J., Pop, J., 1990, Application of emerging wireline formation testing technologies, OSEA-90105, in 8th offshore South East Asia conference [December 4-7, Singapore] preprints: Society of Petroleum Engineers, p. 83-95.
- Zoback, M.D., Moos, D., Mastin, L., and Anderson, R.N., 1985, Well bore breakouts and in situ stress: Journal of Geophysical Research, v. 90(B7), p. 5,523-5,530. Discussion and reply in 1986, Journal of Geophysical Research, v. 91(B14), p. 14,161-14,164. Later reprinted in 1990, in Borehole Imaging reprint volume: Society of Professional Well Log Analysts, p. 399-406.
- Zumberge, M.A., Ander, M.E., Lautzenhiser, T.V., Parker, R.L., Aiken, L.V., Gorman, M.R., and others, 1990, The Greenland gravitational constant experiment: Journal of Geophysical Research, v. 95(b10), p. 15,483-15,501.