Abstract

The Cenozoic basins of interior Alaska are poorly understood, but may host residual hydrocarbon resources in sealable reservoirs that contain hydrocarbons during their Early Cretaceous to Miocene origin. Proposed to detect and characterize such resources is the use of aeromagnetic data. We use a reduced-to-pole aeromagnetic map of the Yukon Flats area to characterize the geophysical nature of the basin.

Geophysical Characterization of Pre-Cenozoic Basement for Hydrocarbon Assessment, Yukon Flats, Alaska

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Yukon Flats schematic geology

Geological Association of Canada

The Yukon Flats schematic geology is composed of: (1) reduced-to-the-pole magnetics (red), (2) magnetic potential (green), and (3) basement gravity (blue). This figure helps to identify and characterize the geophysical nature of the basin.

Yukon Flats Geophysical Domains

Geophysical Interpretation

Gravity lows reflect pervasive felsic intrusions of granitic and metamorphosed sedimentary rocks, undifferentiated (Devonian to Proterozoic), and more subdued magnetic grain. This suggests the presence of dense, non-magnetic basement.
