INTRODUCTION

The 1960 Chile earthquake sequence (Mw 9.5) is the largest instrumentally recorded event in the modern era, with a maximum horizontal displacement of 23 m. The slip occurred on a fault about 1,000 km long and 60-130 km wide, with the outer rise at shallow depths. After the 1960 Chile earthquake, two other large earthquakes occurred: the 1964 Alaskan earthquake (Mw 9.2) off the coast of Alaska, and the 2004 Sumatra earthquake (Mw 9.1) in the Andaman Sea.

The 1964 Alaskan earthquake was generated on a fault about 1,000 km long, with maximum horizontal displacement of 20 m. The earthquake occurred in a forearc and offshore region, and the tsunami generated caused significant damage in coastal areas.

The 2004 Sumatra earthquake was generated on a fault about 1,000 km long, with maximum horizontal displacement of 13 m. The earthquake occurred in an area of shallow bathymetry, and the tsunami generated caused significant damage in coastal areas.

1960 CHILE

- Source: Central America
- Depth: 5 km
- Magnitude: 9.5
- Rift: 

1964 ALASKA

- Source: Alaska
- Depth: 20 km
- Magnitude: 9.2
- Rift: 

2004 SUMATRA

- Source: Sumatra
- Depth: 30 km
- Magnitude: 9.1
- Rift: 

REFERENCES


CONCLUSIONS

All three earthquakes show that the near-field tsunami hazard is significantly exceed the medium to high hazard levels. The distances of the three earthquakes are different, but all the earthquakes are caused by large slab subduction. The tsunami waves are generated by the subduction of the overriding plate, and the tsunami waves are generated by the subduction of the overriding plate.

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