

Recognizing the Characteristics of Seismically Triggered Turbidites

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Abstract

Margin basins in tectonically active areas typically contain turbidites that have been deposited from turbidity currents generated by seismic events. Some slope failures are triggered by earthquakes, and turbidites may provide a valuable long-term record of major earthquakes. Understanding the frequency of these flows, and their timing and triggers, is therefore important for understanding how sediment is transferred globally, effective recovery of oil and gas reserves, hazards of strategic cable networks, and the recurrent intervals of tsunamis and earthquakes. The result of sedimentary structures do not yield direct clues about the triggering force. We may therefore rely on other characteristics to define the probable trigger mechanism. This can be tested in modern locations where a dated turbidite can be matched with an historic earthquake or flood. Box and gravity coring have defined the areal distribution and volumes of turbidites laid down during historic time. The deposits have been dated by radiometric methods (^{210}Pb , ^{14}C), and by counting annual primary laminations. In the stratigraphic record, it would appear that the best criteria for defining seismo-turbidites from turbidites of other generating mechanisms are observed directly time of individual turbidites.

Reference

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