UPLIFT AND SUBSIDENCE DURING THE SEPTEMBER 2007 MENTAWAI EARTHQUAKES FROM FIELD OBSERVATIONS

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ABSTRACT

Seismic rupture of the Sunda megathrust offshore southern Sumatra in September 2007 resulted in uplift of part of the Mentawai Islands. The 700-km-long Mentawai patch last ruptured in 1797 and 1833. Measurements of vertical deformation using GPS and coral microatolls indicate that 2007 uplift is entirely within the region of uplift of the 1833 earthquake but does not extend northwestward into a region that last slipped in 1797; moreover, uplift in 2007 is less than in 1797 or 1833. The limited spatial extent and the modest amounts of slip in 2007 indicate only a fraction of potential accumulated slip was relieved by the 2007 earthquakes. This suggests the 2007 earthquakes are only the beginning of a new sequence of large ruptures of the Mentawai patch.





Uplift & Subsidence Associated With September 2007 Earthquakes







