

## **Examining Background Seismicity in the Mentawai Region of Sumatra Using Caltech's Tectonic Observatory Local Short-Period Seismic Network**

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A small seismic array was installed in the Mentawanai region of Sumatra in May 2005, to monitor seismic activity following the two very large recent earthquakes. The array consists of six short-period seismic stations, four of which are located offshore on Pulau Nias, Pulau Siberut and the Mentawai Islands, with the remaining two stations on mainland Sumatra. Initial earthquake detection and hypocenter location, done with the SEISAN system, indicates a considerably greater level of regional seismicity than reported by the National Earthquake Information Agency (NEIC). This is particularly notable in the region directly east of the island Pulau Siberut. In addition, a double-difference procedure has been used to re-located hypocenters. Cross-sections perpendicular to the Sunda Trench provide insights on subduction geometry, presence and location of back-arc thrusts, and uptake of the strike-slip component from the oblique subduction zone in regions removed from the Great Sumatran Fault.