

## Source process and tsunami generation of the 2004 Sumatra-Andaman earthquake

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We are studying the source process of the 2004 Sumatra-Andaman earthquake using seismic, geodetic and tsunami data. Aftershocks of the earthquake suggest that the fault plane extended for more than 1000 km from Banda Aceh to the north Andaman Islands. Initial inversion results (Figure 1) of long-period (80-300 sec) surface waves suggest that the moment amounts to  $7.5 \times 10_{29}$  dyne.cm with most of the slip (up to 8 m) concentrated on the southern section of the subduction zone from Aceh to the Nicobar islands. We will include body wave data as well tide-gauge and geodetic data to better constrain the rupture distribution of this earthquake and compare the tsunami generated from this model to the observed run-up heights in the area. We are also evaluating methods for improving rapid tsunami height estimation from seismic data for potential use in tsunami hazard mitigation.

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Figure 1. Preliminary slip distribution of the December 2004 Sumatra-Andaman earthquake (left panel) from the inversion of long-period surface waves (right panel).