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Discussions

Interactive comment on "Structure of the Central Sumatran Subduction Zone Revealed by Local Earthquake Travel Time Tomography Using Amphibious Data" *by* Dietrich Lange et al.

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The excellent manuscript by Lange and others describes a local Vp and Vp/Vs tomography of the Mentawai seismic gap region in Sumatra, Indonesia based on an amphibious seismic array. The paper lays out the methodology very clearly, showing the potential and limitation of the data through a series of resolution and synthetic tests. The methodology involves 1D, 2D, and 3D velocity models. The analysis reveals the seismic structure of the region down to about 60 km depth. Of particular interest is the velocity structure down-dip the megathrust that highlights the position of the toe of the mantle wedge, a region thought to control the down-dip extent of earthquakes.

Sumatra stands out because there is no clear long-term nor short-term slow slip events there, while it is found pretty much in every other subduction zone when data is available. This excellent paper is ready for publication as is, except for a few typos (misuse of subjunctive at line 5 on page 16, typo in section title 5.4). Figures 9 and 10 need to be bigger.

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