

Seismic discontinuities beneath Indonesia as inferred from the receiver function method

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We analyzed broadband waveforms recorded by the newly deployed Japan-Indonesia Seismic Network to determine the depths of the 410 km and 660 km discontinuities and thickness of the mantle transition zone beneath Indonesia by the receiver function method. The discontinuities have an undulation with a maximum difference of 40 km with respect to the Iasp91 model. The thickness of the transition zone is well correlated with seismicity and seismic velocity anomalies, suggesting that the topography is caused by temperature anomalies associated with the subducted slabs beneath Indonesia.