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SIT040-04

Room:104

Time:May 23 15:00-15:15

## Waveform inversion of broadband body wave data for the S-velocity structure in the lowermost mantle beneath India

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We conduct waveform inversion for the radial shear velocity structure of the lowermost mantle beneath India using transverse component body wave waveform data obtained from the ORPHEUS and IRIS arrays in the passband 8-200 s for earthquakes that occurred in 1995-2006 beneath Southeast Asia with epicentral distances of 60-95 degrees. As we use higher frequency data than most previous waveform inversion studies, we make several improvements in the techniques. We introduce a new method for data correction. We also conducted tests to confirm the robustness of the results for several different starting models, and varying other conditions as well. The average S velocity of this region is almost the same as PREM, but we find that the velocity is faster than PREM between 2500-2750 km and slower than PREM between 2750 km-CMB. This suggests that the pv to ppv phase transition occurs in this region. Following Kawai & Tsuchiya (2009), if we assume the composition of D'' is pyrolytic, the thickness of the thermal boundary layer in this region is about 250-300 km.

Keywords: waveform inversion, lowermost mantle, D'', beneath India