Estimate of the rigidity of eclogite in the lower mantle from waveform modeling of broadband S-to-P wave conversions

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1. Figures S1 and S2 with captions

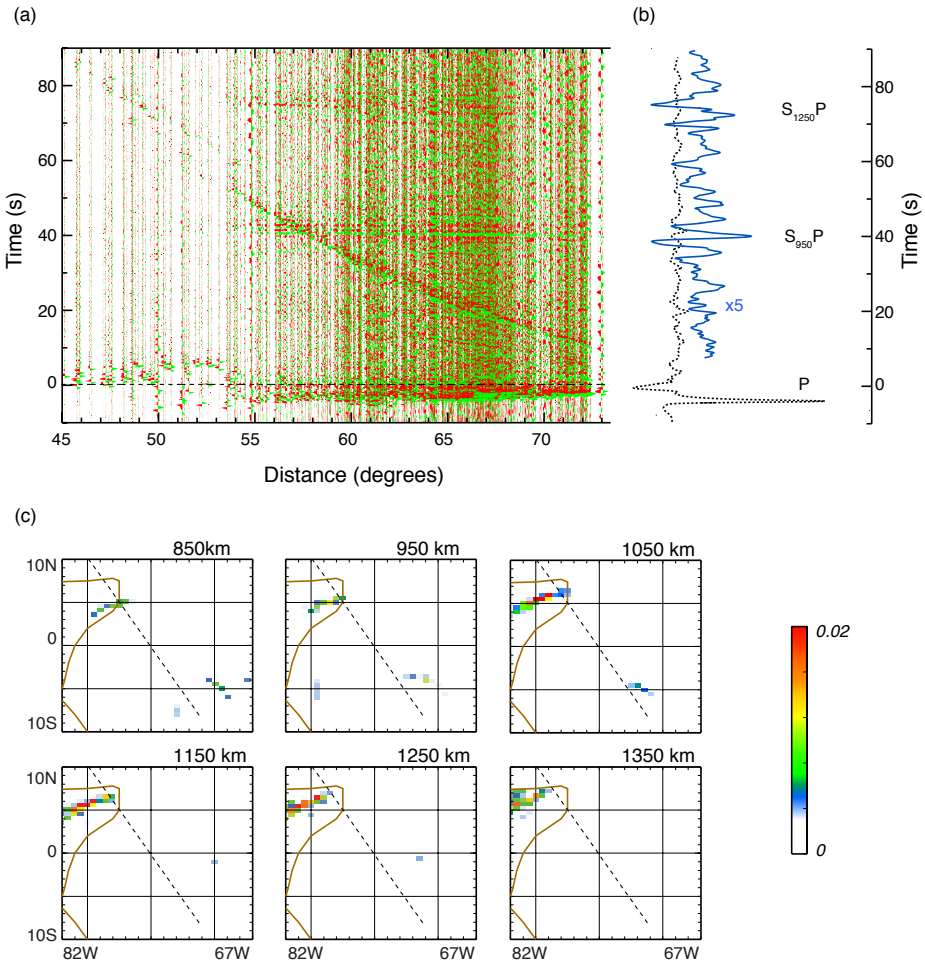

Figure S1. (a) Record section of July 21, 2007 event after rotating the waveforms by 2.5° to optimize the alignment of $S_{950}P$ and $S_{1250}P$. These signals are complex and may include S-to-P conversions over a broader depth interval. (b) Stacks of the original vertical-component displacement waveforms (black dotted line) and the rotated waveforms (blue line). The latter has been multiplied by a factor of five for clarity. (c) Semblance analysis demonstrating that off-azimuth scattering is responsible for $S_{950}P$ and $S_{1250}P$. Note that the scattering depths are poorly defined.

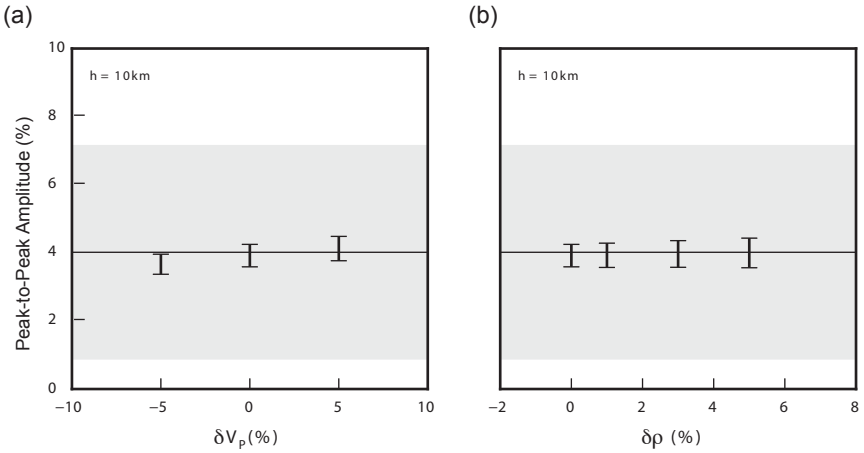

Figure S2. Peak-to-peak $S_{1750}P$ amplitude normalized to the radial SV component as a function of (a) P-velocity anomaly δV_P and (b) density anomaly $\delta\rho$. The block has a thickness of 10 km. The horizontal black line indicates the mean value of the amplitude. Its two grey envelopes are one- and two-standard deviations wide. Vertical black bars are predicted amplitudes with error bars estimated from the minimum and maximum values for a range of epicentral distances. This figure demonstrates that the $S_{1750}P$ amplitude is weakly dependent on the P-velocity and density. It is based on a waveform analysis at a dominant frequency of 0.2 Hz (5 s period), slightly lower than in the analysis described in Figures 4 and 5