

Supporting Information for

Travel-time Inversion Method of Converted Shear Waves Using RayInvr Algorithm

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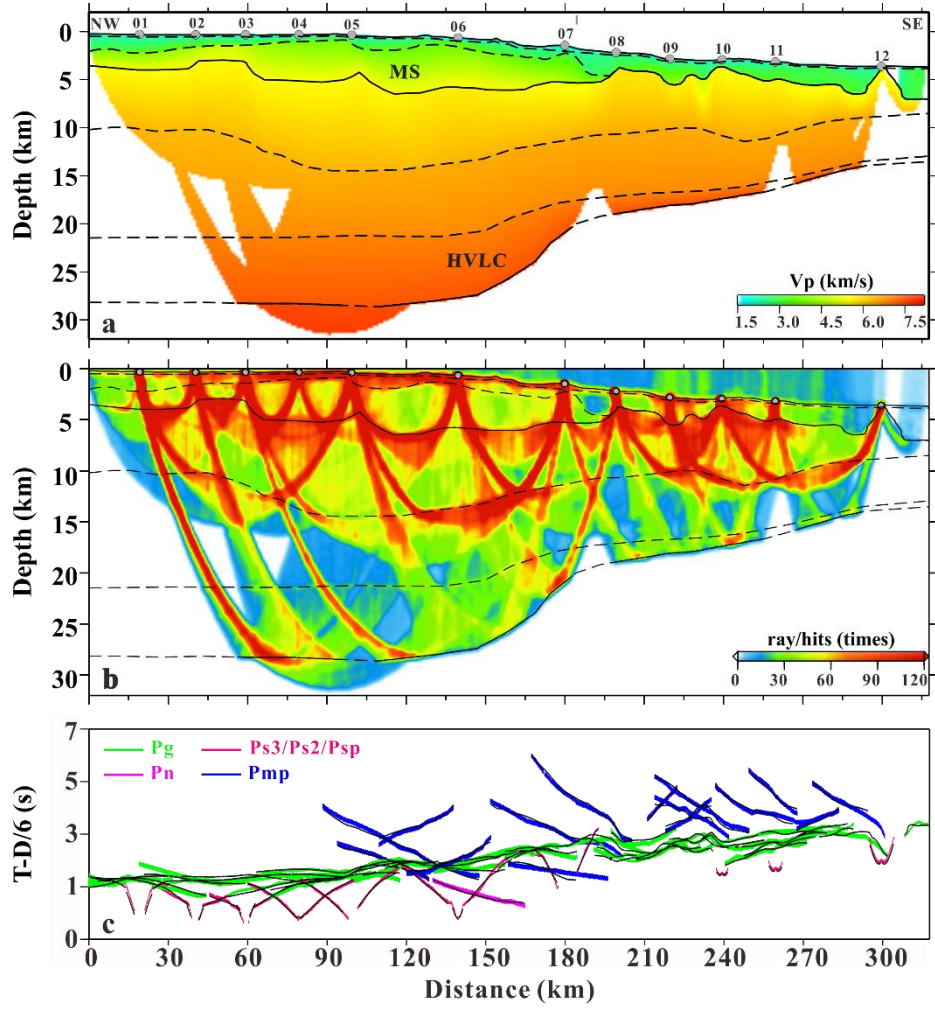


Figure S1. (a) Results of the forward P-wave velocity *RayInvr* model, along profile NS5. Gray circles are OBS locations. The transect is divided into three parts: upper slope, lower slope, and oceanic basin. (b) Ray coverage density distribution. The ray number counting grid has a cell size of 1×0.25 km, the blank areas are uncovered. (c) Comparison of the picked (colour) and calculated (black) travel times of the same phases, for each OBS. MS: Mesozoic strata, HVLC: high velocity lower crust.

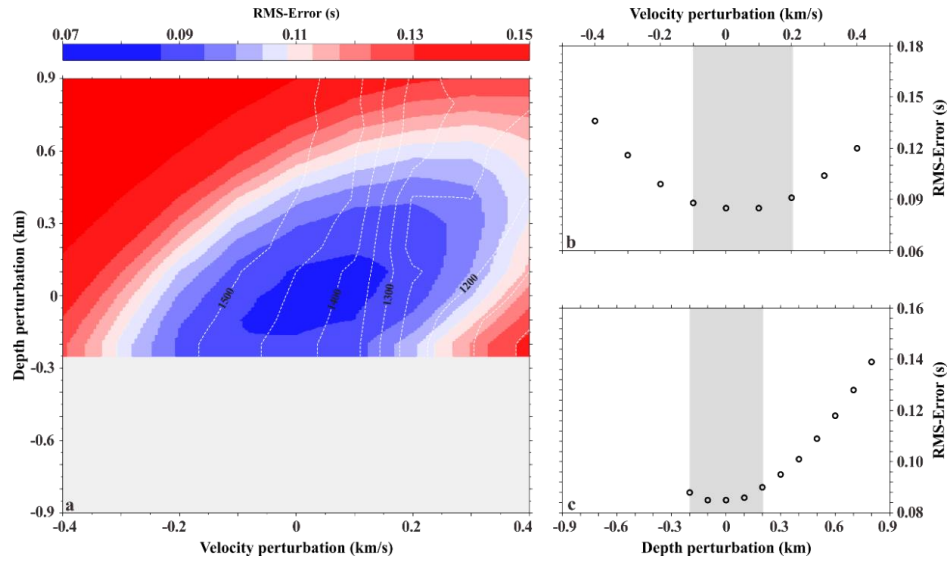


Figure S2. (a) Results from simultaneously varying the depth of the Moho and P-wave velocities in the layer of high velocity lower crust. Contours indicate the number of Pmp phases explained by the forward model. (b) Results from varying the P-wave velocities only in the layer of high velocity lower crust. (c) Results from varying the depth of the Moho. Gray box represents calculated uncertainties from 95% confidence limit of F-test.

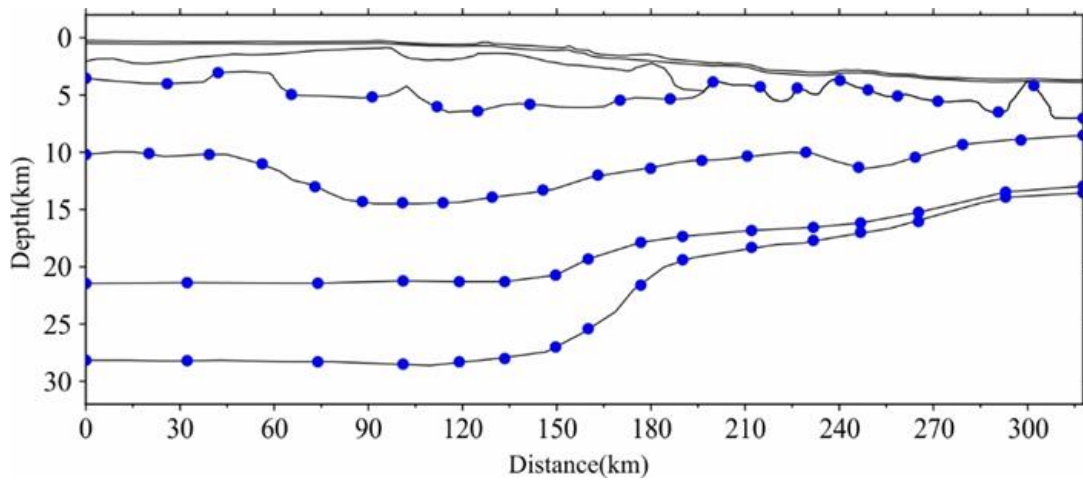


Figure S3. The velocities grid nodes for the inversion. The average inversion grid is set to 14, 16.5 and 19 km in the upper crust, lower crust and high-velocity lower crust, respectively.

Table S1 The polarization angle for each OBS

OBS01: 61°	OBS03: 37°	OBS05: 147°	OBS07: 45°	OBS09: 95°	OBS11: 47°
OBS02: 140°	OBS04: 14 °	OBS06: 130°	OBS08: 48°	OBS11: 117°	OBS12: 9°