

Supplementary Material

Description of the Supplemental Material

Supplemental Material for this article includes figures illustrating P and S ray paths of sourcereceiver pair (S1 and S2), validity for the data resolution of Checkerboard test (S3, S4 and S5), free-form synthetic test (S6) and absolute velocity results for the cross-section (S7). Table S1 for the information of PHIVOLCS-IES stations used in this study and Table S2 for the seismic tomography inversion parameters.

List of Supplemental Figures and Table



Figure S1. P-wave ray paths of source-receiver pair for horizontal sections.



Figure S2. S-wave ray paths of source-receiver pair for horizontal sections.



Figure S3. Results of the checkerboard resolution test for P-wave at depth layers with a lateral grid interval of 40 km and 60 km in the longitudinal and latitudinal directions. The layer depth is shown below each map.



Figure S4. Results of checkerboard resolution test for S-wave at depth layers with a lateral grid interval of 40 km and 60 km in the longitudinal and latitudinal directions. The layer depth is shown below each map.



Figure S5. Results of the checkerboard resolution test for P- and S-wave at vertical sections with the size of each board is 50 km x 50 km x 50 km. The locations of these profiles are shown in Fig. 1.



Figure S6. Results of the synthetic test with the realistic configuration of pattern in vertical sections. The locations of vertical section models are corresponding to profiles listed in Fig. 1.



Figure S7. Seismic tomography results of vertical cross-sections showing absolute velocity for the P-wave (left) and S-wave (right). The locations of vertical section models are corresponding to profiles listed in Fig. 1.

Station	Sensor	Latitude	Longitude	Elevation	Start date
CVPB	Trillium 120PA #0629	17.703°N	121.818°E	142.8m	25/05/2010
SIPB	Trillium 120PA #0635	17.890°N	120.459°E	117.8m	30/06/2011
BAGB	Trillium 120PA #0632	16.409°N	120.581°E	1618.3m	02/07/2011
PGPB	Trillium 120PA #0977	13.501°N	120.952°E	127m	04/07/2011
PIPB	Trillium 120PA #1713	18.325°N	120.619°E	67.9m	28/11/2013
CLVB	Trillium 120PA #1728	18.603°N	121.073°E	68.6m	26/01/2015

Table S1. List of type of sensors, location and start date of the PHIVOLCS-IES stations

Table S2. Major controling parameters used for Calculation of the tomographic model

Parameter	Value
Nodal size	20x20x5 km
Smoothing for the P-wave velocity	1.5
Smoothing for the S-wave velocity	3.5
Amplitude damping for the P-wave velocity	1.0
Amplitude damping for the S-wave velocity	1.0
Weight for correction of source coordinates	5.0
Weight for correction of source original time	5.0