Heterogeneity of the Intra-island-arc crust from seismic tomography of the joint observation data in the Tohoku arc, Japan

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We have been conducting a joint seismic observation in Tohoku area, Japan,with nationwide Japanese universities since July 1997.We estimated athree-dimensional P-wave velocity structure in the crust and the uppermostmantle by the Tomography method (Zhao et al., 1992). The estimated P-wavevelocity structure shows that there is a north-south zonal distribution: the eastern Tohoku area has a relatively high velocity in the uppermost crust.Beneath the Backbone range is a low velocity, and in the western areabetween the range and the Japan Sea coast is a medium velocity where, in detail, also is a velocity variation in north-south direction. At depths of 10 to 20 km, the low velocity area beneath the Backbone range moves westwards in 10-20 km.