

## Structure and evolution of sub-arc mantle in Northeast Honshu arc, Japan

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Three-dimensional structures beneath the NE Honshu arc has been obtained from seismological data analysis. They show the mantle heterogeneities across and along arc. Geological and petrological data revealed that the mantle heterogeneities have formed at the continental margin and during the opening of Japan Sea. The along-arc heterogeneity has formed at the continental margin and the across-arc heterogeneity has formed during the opening of Japan Sea. The former heterogeneity derived by the counter-clock wise rotation of NE Honshu to the Pacific plate.