Seismic response of the Tokachi basin and effect of propagation path for plate-boundary earthquakes

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Seismograms observed at Hokkaido for plate-boundary earthquakes are characterised by large Sn and relatively small Lg. Group velocities of the Lg are lower than those for inland earthquakes, for which we can see dominant Lg in the seismograms. In order to see how the seismograms are influenced by velocity structure along the propagation paths, which cross over a continental margin to the south of Hokkaido, we performed two-dimensional simulations of seismic wavefields using the pseudospectral method. The results clearly illustrated that amplitude of Sn is strongly affected by the crustal structure near the margin and that the nature of Lg is significantly changed by the crustal structure along the propagation path.