

Seismic imaging in the trench axis area of Japan and Kuril trenches off Hokkaido

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We conducted a seismic reflection survey off Hokkaido area to obtain detailed seismic reflection profiles around the Japan and Kuril trench axis in December 2016. Seven seismic lines, 4 in the northernmost Japan Trench and 3 in the westernmost Kuril Trench, were acquired during YK16-17 cruise using a 192-channel 1200-m-long streamer cable and 380 inches³ cluster guns. Seismic images obtained in the northern Japan Trench show the landward dipping reflections in the frontal prism. Thickness of the sediment on the incoming Pacific plate is variable between ~ 200 –500 ms (two-way travel time). The thickness of the incoming sediment is thick as ~ 700 ms (two-way travel time). Stratified trench fill sediments are imaged in the Kuril Trench sections, which were not observed in the Japan Trench profiles. The stratified trench fill sediments might be related to the Kushiro Canyon located at the north of the obtained profiles.