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On locations and waveforms T-phase generated earthquake around off-Tokachi trench-trench junction

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After 2003 Tokachi-oki earthquake (M8.0), earthquake activity in the outer rise region, trench-trench junction, has been activated, which is characterized by accompanying T-phase waveform with long duration (~1min). The previous report by Watanabe et al. (2008) was based on the automatic event detection, and concluded that at least earthquakes occurred on the Pacific plate accompany with T-phase. In this study, more careful description on the emergence of the T-phase, was dedicated in the manual phase picking, and compiled with the manual location result. In a newly compiled dataset between October 2007 and December 2009, epicenters of T-phase generated earthquake were located at depth of more than 4000m along the Kuril trench and 3000 m along the Japan trench. Some intermediate-deep earthquakes occurred at the eastern off Hokkaido generate T-phase, which is recorded off Sanriku ocean bottom seismometer, however, the excitation of T-phase is weaker than that observed by off-Kushiro ocean bottom seismometer, whose epicenter is located near the trench-trench junction.

Keywords: trench-trench junction, T-phase, ocean bottom seismometer