

Understanding recoupling process using a seafloor geodesy in megathrust earthquake zone

OSADA, Yukihiro^{1*} ; ITO, Yoshihiro² ; KIDO, Motoyuki¹ ; HINO, Ryota¹ ; IINUMA, Takeshi¹

¹IRiDes, Tohoku University, ²DPRI, Kyoto University

The 11 March 2011 Tohoku-Oki earthquake ruptured the interplate boundary off the eastern shore Honshu, generated a devastating tsunami that swept the coastal area along the northeastern Japan. The seafloor geodesy brought important results that show that the large slip was near the Japan Trench and suggested the heterogeneity of the coseismic slip distribution in the plate interface. The maximum displacement region for interplate earthquake is mainly located offshore region. Therefore it is important to monitor the postseismic displacement and the stress accumulation process using seafloor geodesy. And if we can observe the postseismic displacement near the Japan Trench, we contribute to understand the coupling condition of plate boundary. There is a seafloor acoustic ranging system for direct observation of horizontal displacement on seafloor. We improve this system that adapted for the axis of Japan Trench. The system is designed to measure distances of up to 3 km and to adapt the pressure vessel of 9000m water-depth. We deployed the seafloor acoustic ranging system between 2013 May and 2013 Sep. We observed across the Trench baseline (about 7km), baseline between the bottom of Trench to the seaward side of Japan Trench (about 3.6km). We get data both baseline results for 4 month. We report this results on this presentation.

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