Japan Geoscience Union Meeting 2012
(May 20-25 2012 at Makuhari, Chiba, Japan)

SSS28-P17 Room:Convention Hall Time:May 24 17:15-18:30

Rupture Process of Torishima-Kinkai Earthquake(M7.0) on 1 January, 2012 by Back Projection Method

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It is occurred M7.0 earthquake (maximum seismic intensity was 4) in plate near Torishima Island on 1 January, 2012. The hypocenter located by JMA is at 31.256^{o}N 138.339^{o}E and a depth of 397km. The focal mechanism is pressure axis in the direction of a type that has the Philippine Plate is subducting Pacific Plate, and the fracture occurred in Pacific Plate. It is not occurred earthquake of M7-class in the fault after 1970 . By using of teleseismic body-wave waveform inversion method(JMA), the fault is about the length of 25km, the width of 20km, the strike of 6^o, the dip of 84^o and the angle of -73^o. The maximum slip is about 1.0m. The duration time is 15 seconds. The main rupture process is located deeper than the starting point. In the fault plane can be seen two large slip.

In this study we applied the back projection method to teleseismic body waveforms recorded USArray. The USArray consists of about 400 broadband stations in the United States. We obtain an image of the rupture process of the Torisima-Kinkai earthquake by back projection method in consideration of three-dimensional fault plane.

Keywords: back projection method, rupture process, Torishima-Kinkai Earthquake