

The stress change of Chubu region before and after the 2011 Tohoku-oki Earthquake(Mw9.0)

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Great subduction-zone earthquakes occur frequently off coast of the Pacific Ocean in Japan. And the Chubu region (central part of Honshu, Japan) has risk not only subduction-zone earthquake but also inland earthquake. In 1891, Nobi earthquake (M8.0) occurred at Neodani fault system in Chubu region, which is the largest inland earthquake in Japan. (Milne 1893) Furthermore, after Tohoku-oki earthquake, seismicity of northern part of Neodani fault system was activated. (Toda et al, 2011) In this study, I examined effect of Tohoku-oki earthquake on seismicity around the Neodani fault system by inferring of stress change before and after Tohoku-oki earthquake.

At first, I demonstrated the stress field inversion method (Hardebeck & Michael, 2006) by synthetic data to check the performance of this inversion method. As a result, I found that the inversion method will analyze real data well.

Next, I conduct stress field inversion for the joint observation data by eight Universities in Japan and NIED (National Research Institute for Earth Science and Disaster Resilience in Japan) in the Chubu region between 2009 and 2013. As a result, I found the stress field in Neodani fault system didn't change significantly before and after Tohoku-oki earthquake.

Keywords: Tohoku-oki Earthquake, Inland Earthquake, Neodani fault system, stress field inversion