

Abnormal strain distribution in Hokkaido, Japan, inferred from the 2003 Tokachi-oki earthquake

ISHIMORI, Kentaro^{1*} ; OHZONO, Mako²

¹Department of Earth and Environmental Sciences Graduate School, Yamagata University, ²Faculty of Science, Yamagata University

To extract the abnormal strain distribution caused by heterogeneous subsurface structure in Hokkaido, Japan, we compared observed coseismic crustal deformation with theoretical crustal deformation of the 2003 Tokachi-oki earthquake (M8.0). Observed data is extracted by the difference of the daily coordinates, which is provided by GSI (F3 solutions), before and after the event. Theoretical data is calculated from dislocation model (Okada, 1992), which assumes deformation in uniform elastic half-space, using fault parameters provided by GSI. The observed coseismic displacement is explained by calculations well, except for several areas. Dilations are also roughly agreed with each other. However, several areas show deformation excess and deformation deficit with respect to theoretical model. Especially, in Hidaka region, which is high seismic velocity region (kita et al., 2012), corresponds to deformation excess area, and Kamuikotan region, which has thick sediment layer, corresponds to deformation deficit area. These results might imply the effect of the heterogeneous subsurface structure around the region.