[EJ] Evening Poster | S (Solid Earth Sciences) | S-SS Seismology

[S-SS09]Crustal Deformation

convener:Tadafumi Ochi(Institute of Earthquake and Volcano Geology, Geological Survey of Japan, The National Institute of Advanced Industrial Science and Technology), Mako Ohzono(Institute of Seismology and Volcanology, Graduate School of Science, Hokkaido University)

Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Study of crustal deformation plays an extremely important role in the investigation of wide scale earth dynamics those are earthquake and volcanic activity, plate motion and so on. In our session, we discuss the study related to crustal deformation, such as development of observation instrument, observed crustal deformation, analysis method, and simulation study.

[SSS09-P09]Estimation of block boundaries around the Izu Peninsula based on GNSS data using hierarchical and non-hierarchical cluster analyses

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Keywords:GNSS, Izu Peninsula, Block boundary

The purpose of this research is to estimate the block boundaries around the Izu Peninsula based on GNSS horizontal data, as an application of cluster analysis following recent studies (e.g., Simpson et al., 2012; Savage, 2018). Using F3 solution of the GNSS data by Geographical Survey Institute, we obtain displacement rates for 2 years, 3 years, and 5 years during 2005-2010. We perform cluster analyses of the displacement rate data into 3 divisions by the Ward method of a hierarchical method and the k-means method of a non-hierarchical method, and plot the results on maps. On the basis of the Delaunay triangulation algorithm, each observation point was connected. Then we mark lines of which endpoints are classified in a different cluster, and stack them to estimate the locations of the block boundaries. The block boundary goes north along the Suruga Trough and joins the Darumayama fault zone in the western part of the Izu Peninsula. It crosses the Izu peninsula eastward and separates Izu Oshima from the Izu peninsula. The block boundary also extends northward toward the Hakone volcano along the eastern Izu volcano group and Tanna fault.