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Construction of GEONET quasi-real-time analysis system

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GSI has processed the GPS kinematic analysis with GEONET 1 Hz sampling data when a large earthquake occurs. The purpose of this analysis is to obtain the detailed behavior of land deformation caused by the earthquake with high time resolution. This method also has an advantage in terms of the time until we can get results. Because of processing data with epoch-by-epoch, compared to the GEONET routine analyses which need at least 6 hours data set, it enables us to start the analysis flexibly. Meanwhile, we need to be careful when we use it that the accuracy and reliability is relatively worse than the GEONET routine analyses.

A current problem is that we spend long hours until starting process because of some steps like deciding the area, choosing GEONET stations and setting appropriate parameters. We have carried out those steps manually and could not fully utilize the advantages. So we establish a new strategy to kick off the analysis automatically by using the information from the JMA Earthquake Early Warnings system. This new method has been applied since March 2011 and made us possible to get results within 1 hour in the fastest case.

Keywords: GEONET, GPS