

## Slow slip event induced by earthquake swarm in inland of northern Hokkaido?

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Northern Hokkaido is one of the high seismicity areas. Coordinate time series of a GNSS observation site GEONET0851 (Horonobe) started to show an abnormal trend in July 2012 when an earthquake with M4.2 and following swarm took place in northern Hokkaido. In order to extract detailed crustal deformation and confirm abnormal coordinate time series at other GPS sites, we analyzed GPS data obtained from GEONET and our dense GPS network, which we have installed to monitor detailed crustal deformation process in the northern Hokkaido. As a result, northeastern region from the hypocenter of earthquake swarm in 2012, which is located between two active fault zones, shows mainly E-W extensional field following the M4.2 earthquake and swarm activity similar to the deformation suggested at the site GEONET0851. On the other hand, eastern part of this region crossing the Toikanbetsu fault zone indicates mainly E-W compressional field at the same time. These results suggest a possibility of local crustal deformation related to the inland seismic activity. There would be two possible causes of this event. One is the inelastic deformation in the crust, and the other is a slow slip event on a preexistent fault, which would be a structural boundary. Comparing multi-geophysical data, we will further investigate the cause of this abnormal crustal deformation and the relationship with the seismic activity.

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