

Possibility of a long-term slow slip event around the Shima Peninsula from late 2017

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In the Nankai Trough, slow earthquakes such as long-term slow slip events (SSEs) and short-term SSEs have been observed. Long-term SSEs occur around locked fault zones that are considered likely to cause large earthquakes in the future. It is important to characterize the spatiotemporal transitions of long-term SSEs.

I used the daily coordinates of the GEONET F3 analysis operated by the Geospatial Information Authority of Japan. I removed coseismic offsets, artificial offsets, annual and semi-annual variations, and long-term trend. From the displacement from June 2017 to December 2017, the displacement in the same period of the previous year was subtracted. Unsteady displacement in southeast direction about 5 mm was seen in the Shima Peninsula.

Assuming that this displacement is due to a long-term SSE, a rectangle source was estimated by a global optimization method. Estimated source was located around the Shima Peninsula and moment magnitude was 6.0.

The GNSS F3 coordinate data and offset data were provided by the Geospatial Information Authority of Japan.

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