

Shallow Slow Slip Event Off the Kii Peninsula in April 2016, Japan

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On 1 April 2016, an earthquake ($M_w=5.9$, hereafter mainshock, USGS) occurred off the Kii Peninsula, Japan. The mainshock occurred around the expected focal region of the so-called Tonankai earthquake. After the mainshock, strain and pore-pressure changes caused by the slow slip event (SSE) were observed by the three borehole strainmeters of AIST. The source region of this SSE is located on the plate interface at southeast side of the mainshock. An equivalent magnitude of this SSE is $M_w 6.0$, and duration is about 7 days. From after just a few days from the mainshock, in and around this SSE source region, intensive activity of shallow low frequency tremor has been observed for about two weeks, it is assumed that these shallow tremor events were induced by this SSE.

In off the Kii Peninsula, VLF and Low Frequency Earthquake has been often observed, but SSE had not been observed by geodetic method. The slip deficit rate of this SSE source region is about 3 cm / year (Yokota *et al.*, 2016), and the plate convergence rate is 5.0 to 6.5 cm / year (Heki and Miyazaki, 2001). Therefore, in addition to this case, there is a possibility that SSE frequently occurred in this region.

References

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