

Research of the short-term slow slip events in Aichi Prefecture - low frequency earthquake

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Kobayashi et al. (2006) investigated the strain changes according to short-term slow slips in Aichi Prefecture for two periods. They detected eleven strain changes in about fifteen years from July 1984 to August 1999 (period one), during which only the data of volumetric strainmeters were available. Twenty strain changes were detected in six years from September 1999 to August 2005 (period two), during which the data of multi-component strainmeters and information of low frequency earthquakes were also available. Therefore, we confirmed the triggered seismic waveforms since May 1995 of the period one.

We confirmed the seismic waveforms from May 1995 to August 1999, which hypocenter were located in the low frequency earthquake area in Aichi Prefecture and the southern part of Nagano Prefecture, and judged whether it was a low frequency earthquake. As a result, twenty low frequency earthquakes were found. There is no period corresponding to the strain change that had already picked out. We also confirmed the records of the strainmeters for the periods when the low frequency earthquakes were found, but no significant change was seen.

In general, the magnitude of the low frequency earthquake is small, and its predominant period is similar to that of background noise. When the existence of the low frequency earthquake is not recognized enough, it is thought that phases has not picked even if the event was triggered. Therefore, we confirmed the triggered seismic record for the periods corresponding to three strain changes detected between May 1995 and August 1999, whether the low frequency earthquake or tremor was included. As for these three events, the low frequency earthquake and tremor were accompanied. It seems that the detection of the strain changes corresponding to a short-term slow slip were appropriate.