

Dynamic triggering of shallow slip enhanced by overlying sedimentary wedge in Southwest Japan with coulomb stress change on the plate boundary

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Slow slip events have been recognized for last ten years at subduction zones in the world, which event is one of the important events of fault slip. Tectonic tremor which include slow earthquake family have been triggered by teleseismic earthquakes due to passing seismic waves. Wallace et al. [2017] revealed the large scale dynamic triggering of shallow slow slip enhanced by overlying sedimentary wedge in New Zealand. However, it is not enough that the number of clear examples of large, geodetically detected slow slip events triggered by teleseismic event. Shallow slow slips have been observed with variation of borehole pressure data off Kii Peninsula in Do-net network [Araki et al., 2017]. These slow slips re-occurred about from 6 to 12 month. We try to find triggered slow slips by teleseismic earthquake off Kii Peninsula to estimate coulomb stress change on the plate boundary.

Immediately following the large earthquakes in 2011 and 2016, borehole pressure detected slow slip which continued from about several days to two weeks. Here, we estimate synthetic waveforms and stress change of these teleseismic events with OpenSWPC [Maeda et al., 2017] on the plate boundary to recognize dynamic stress change.

As a result, the large coulomb stress changes have been observed around the close to the trench, which area included network location of borehole. It is not clear that the physical conditions and mechanisms leading to SSE occurrence. SSEs could be occur on faults with low effective stress with high pore fluid pressures [Kodaira et al., 2004; Liu et al., 2007]. These physical situations make SSE occurrence area sensitive from local and regional earthquakes and tidal perturbations [Rubinstein et al., 2008; Thomas et al., 2009]. These results therefore suggest that low-velocity sedimentary wedge distributes in shallow subduction interfaces, which condition could be highly susceptible to dynamic slip triggering as same as New Zealand event.