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Activity of non-volcanic tremors associated with the 2009-2010 slow slip event in the Bungo Channel region

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In the Bungo Channel region, the westernmost region of tremor belt in southwest Japan, tremor episode energetically occur with a recurrence interval of 2 to 3 months. Long-term slow slip events occurred in 1997, 2003, and 2009-2010 at the shallower portion of the subducting plate interface in the same region. It has been shown that these aseismic slips activated tremor occurrences. Recently it has been observed that very low-frequency earthquakes are also associated with these events at the further shallower portion near the trench axis. This indicates that long-term slow slip events modulate the occurrences of other slow earthquakes. In this study, we have investigated characteristics of the space and time variation in seismic moment release due to tremors in the Bungo Channel region before and during the 2009-2010 slow slip event for elucidating relation between tremor and slow slip.

Keywords: slow slip event, non-volcanic tremor, Bungo Channel, slow earthquake, reduced displacement