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Quasi-static slip in Hyuga-nada and east off the northern part of Nansei-shoto estimated from repeating earthquakes

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Quasi-static slip in Hyuga-nada and east off the northern part of Nansei-shoto, Japan is estimated by using small repeating earthquake data. The results show that the slip rates of whole area are nearly equal or somewhat less than the convergence velocity of the Philippine Sea plate. The characteristics of the spatial distribution of slip rate are different between the northern and southern regions of southeast off Tanegashima. In the region from Hyuga-nada to southeast off Tanegashima, the slip rates change in short wave length and have a tendency to become higher in general as the plate boundary becomes shallower. On the other hand, in the region from southeast off Tanagashima to around Amami-ooshima, the slip rates do not change in space so much as those in northern region. The lower slip rates are detected at the place between Tanagashima and Amami-ooshima and at the middle of Hyuga-nada. The former seems to be explained by the nearby asperity on the plate boundary. The latter is thought to be the dissolving process of the excess slip associated with two large earthquakes of M6.9 and M6.7 in 1996.

Keywords: quasi-static slip, repeating earthquake, asperity, plate boundary, Hyuga-nada, Nansei-shoto