

Interplate quasi-static slips after the 1996 off east Tanegashima earthquake estimated from small repeating earthquakes

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On December 18, 1996, a large interplate earthquake occurred in the off east Tanegashima Island (Mw6.5), Southwest Japan. In this area, a M7-class earthquake occurred in 1923 and M6-class earthquakes occurred several times in since 1923. We estimate interplate quasi-static slips after the 1996 off east Tanegashima earthquake from the data of small repeating earthquakes with thrust type focal mechanism for the period of May 1994 to July 2009. Quasi-static slips were estimated as same method of Yamashita et al. (2009), which was based on Igarashi et al. (2003) and Uchida et al. (2004). Slip amounts of each small repeating earthquake were estimated using the slip-moment relation for the small repeating earthquakes at the San Andreas fault (Nadeau and Johnson, 1998).

We obtained large quasi-static slips after the 1996 off east Tanegashima earthquake around the source area. The amount of estimated quasi-static slips was ~12cm for 6 months, which value is comparable to the GPS data analysis (Nishimura et al., 1998). They estimated that the amount of afterslip was about 13cm for 5 months. The scalar moment released by quasi-static slip was estimated to be 3.9×10^{18} Nm (Mw6.3). Our result suggest that the amount of moment release by the afterslip is about the same with that by the coseismic slip.

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Reference

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