

## Some Characteristic Small-earthquake Sequences in Japan

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The long-term earthquake prediction has usually used the characteristic earthquake model, which has an almost constant recurrence interval time. However, the essences of the characteristic events are unclear because the recurrence interval is generally very long. The characteristic small-earthquake sequence relatively has the short recurrence interval. Therefore, those events are useful to interpret the nature of the characteristic earthquakes, but only a few cases have been reported.

Matsuzawa et al. (2002) reported M4.9 characteristic earthquakes regularly occurring off Sanriku, northeastern Honshu, Japan. We found the similar characteristic earthquake sequences (JMA, 2010), including the cases off Iwate Prefecture (M6.1 and M6.0; JMA, 2009a), the case off Fukushima Prefecture (M5.7; JMA, 2009a), the case beneath the northwestern part of Chiba Prefecture (M6.1; JMA, 2006), the cases off Okinoerabujima Island (M5.3 and M5.2; JMA, 2009b, Tamaribuchi et al., 2009a), the case near Okinawa Island (M4.1; JMA, 2009b, Tamaribuchi et al., 2009a) and the case near Miyakojima Island (M5.1; Tamaribuchi et al., 2009a, 2010). All of them were interplate earthquakes. In the each case off Iwate Prefecture and off Okinoerabujima Island, two characteristic earthquake groups of similar magnitudes existed nearby. Moreover, in the case near Miyakojima Island, we found smaller recurrence earthquake sequences near M5.1 characteristic earthquakes.

References: Hasegawa et al., 2005, *Zisin2*, 58, 67-70; JMA, 2006, Report of the Coordinating Committee for Earthquake Prediction, 75, 240-242; JMA, 2009a, Report of the Coordinating Committee for Earthquake Prediction, 82, 84-90; JMA, 2009b, Report of the Coordinating Committee for Earthquake Prediction, 82, 417-422; JMA, 2010, Report of the Coordinating Committee for Earthquake Prediction, 83, in press; Matsuzawa, et al., 2002, *GRL*, 29, doi:10.1029/2001GL014632; Tamaribuchi et al., 2009a, Abstr. 2009 Japan Earth Planet. Sci. Joint Meeting, S149-P005; Tamaribuchi et al., 2009b, Abstr. 2009 Japan Earth Planet. Sci. Joint Meeting, S149-004; Tamaribuchi et al., 2010, *Zisin2*, in press.

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