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## FEM model for the Atotsugawa fault system and the surrounding region

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In order to clarify the process by which intraplate earthquakes are generated, we constructed finite element models about the Atotsugawa fault and the surrounding regions. The Atotsugawa fault is one of the major strike slip faults in the western Japan and is located in the Niigata-Kobe tectonic zone (Sagiya et al., 2000). At the both sides of the fault, there exist the Hida mountains and Hakusan mountain. Thus, the fault can provide an unique opportunity to investigate not only the role of the lower crust immediately beneath the seismogenic fault, but also that of the both sides of the fault. Furthermore, the Joint observation group estimated remarkable heterogeneous structures around the Atotsugawa fault (etc., Iwasaki et al., 2007; Nakajima et al., 2007; Yoshimura et al., 2009; Sagiya et al., 2007). We set weak regions around the fault referring to the heterogeneous structures.

**Keywords:** intraplate earthquake, lower crust, stress accumulation process, Weak Zone, Hida mountains, Hakusan mountain