

Seismic velocity structure in Ou backbone range by using a dense seismic array

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Ou backbone range is a strain concentration zone with E-W contraction along NE Japan arc, hence forms one of the most active reverse-faulting zone in Japan. Some destructive earthquakes, such as the 1896 Rikuu earthquake (M7.2) and the 2008 Iwate-Miyagi nariku earthquake (M7.2), have occurred there for this century. Fault rupture of the 1896 Rikuu earthquake which occurred along the eastern margin of the Yokote Basin fault zone did not reach all over the fault zone but limited to its northern part. The purpose of this study is to find some crustal structures which could control a termination of fault rupture. In this presentation, we will discuss a property of seismic velocity structure which might terminate the fault rupture of some historical earthquakes based on seismic tomography using a dense arrayed micro-earthquake observation data.

Keywords: Ou backbone range, Seismic velocity structure, Rupture termination, Micro-earthquake observation, Seismic tomography