

Structural and mineralogical characteristics of an ancient plate boundary fault in the Hidakagawa Formation, Kii Peninsula, Japan

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To understand the slip behavior of mega earthquakes along plate boundary faults, geological studies of ancient seismogenic subduction faults in onland accretionary complexes such as Shimanto have been performed in providing important information about the characteristics of the fault-zone materials. Because the trench-parallel heterogeneity in the slip behavior of subduction earthquake is important to estimate the magnitude of the rupture area in the Nankai Trough, a more investigation at various regions in the Shimanto is required.

We here targeted the *mélange* unit of the Hidakagawa Formation, distributed around the Mio region, Kii Peninsula, and performed structural analysis of the fault rocks on the field and laboratory-based analyses such as XRD and SEM. We found a localized slip zone accompanying the evidence of intense shearing and melting, which might corresponds to an ancient seismogenic fault in the subduction boundary.

Keywords: plate boundary fault, accretionary prism, Nankai trough