

## The Analysis of the fault rocks in the Yokonami Melange, Shimanto accretionary complex, Southwest Japan

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The structures of the fault rocks in the Yokonami Melange record the development process of the faults in an ancient subduction zone.

The purpose of this study is to clarify the evolution processes of faults in accretionary complex, based on Petrologic analysis and the micro-structural analysis.

The shear zone of the Yokonami Melange 1km in wide is characterized by the chaotic block-in-matrix fabrics originated from the stratal disruption of sandstone and blackshale beds with subordinate chert, limestone and greenstones. The Yokonami Melange trends in the east-west direction and is cut by the boundary faults.

Based on structural petrology analysis and the micro-structural analysis, the fracturing mechanism and deformation of shear zone and faults in the study areas can be reconstructed as follows.

In the early stage that the deformation of sediments was initiated by layer-normal compression, pinch and swell and boudin structures were formed by independent particulate flow. In the stage that the deformation was initiated by layer parallel shear, scaly cleavage was formed by pressure solution.

The northern boundary fault in the Yokonami Melange had been sheared from the stages of the grain boundary sliding to the brittle failure.

Whereas the southern boundary fault had affected only the brittle fracture repeatedly

The semi-parallel fault had affected the stick slip repeatedly.

But the fabric-cutting fault had been sheared the brittle fracturing only once. After the brittle fracturing, this fault had been sheared by pressure solution creep.