

Structural, mineralogical, and geochemical characteristics of an ancient megasplay fault in the Hidakagawa Formation, Kii Peninsula

*Takeaki Ogawa¹, Tsuyoshi Ishikawa², Shunya Kaneki¹, Tetsuro Hirono¹

1. Department of Earth and Space Science, Graduate School of Science, Osaka University, 2. Kochi Institute for Core Sample Research, Japan Agency for Marine-Earth Science and Technology

To understand the slip behavior of large earthquakes along subduction zone, a great deal of effort has been made on the accretionary complex such as the Shimanto Belt. Although extensive investigation along the trench is important, no studies have ever tried to analyze fault rocks in accretionary complex of west coast of Kii Peninsula. Here we focus on *mélange* unit in the Hidakagawa Formation, outcropped in the Mio region, Wakayama Prefecture. We revealed geological setting and mineralogical and geochemical characteristic by performing the structural description, Raman spectroscopic analysis, mineral composition analysis, and geochemical analyses of major- and trace-element concentrations of the fault rocks and its surrounding rocks.

The burial depth in this region was estimated 3-4 km, also indicating large cumulative displacement along the fault. Granulation of mineral grains and shear foliation were well developed in the slip zone, and high temperature (>350 °C) by fluid-rock interaction was estimated along the slip zone. These features were well coincided to those in the megasplay fault. Furthermore, we discuss the slip behavior and the slip parameters.

Keywords: accretionary prism, trace-element, fluid-rock interaction, megasplay fault, Shimanto belt