Structural and paleostress analyses in a part of the Muroto Formation, the Paleocene Shimanto accretionary complex, Shikoku.

Yoshitaka Hashimoto[1]; Satomi Minamizawa[2]

[1] Dep. of Nat. Env. Sci., Kochi Univ.; [2] Natural Environmental Sci., Kochi University

In this study, I have conducted structural analysis and palaeo-stress estimation on the basis of meso-scale faults analysis for examination of deformation history recorded in the Eocene Shimanto belt, Shikoku, SW Japan.

Although many studies have been revealed such as age, lithologies, deformation structures and thermal maturity in mélange zones in on-land accretionary complexes that are underplated complexes, there is little study in deformation structure in the coherent units because of a lack of key bed. It is significant, however, to understand deformation history of coherent units because much volume of coherent units is consisted on-land accretionary complexes.

The study area is at the Cape Gyoto where coherent unit is well-exposed along pacific coast line. Previous worker have revealed that a regional syncline are observed in this area, and now beds dips almost vertical. In the study area, about 60m thick deformation zone and another coherent unit are identified. All data of deformation structures in the deformation zone such as strikes and dips of bedding, fold plane, fold axis, compactive cleavages (pressure solution cleavage) indicate that the stress field of the deformation is NW-ES trending compaction. In addition, palaeo-stress analysis on the basis of meso-scale faults also suggests SW-NE compaction. Those systematic deformations may indicate that the study area is not originated from sedimentary process but tectonic deformation.

Correction of all deformation data to be horizontal setting also indicates systematic palaeo-stress fields, that is low angle NE-SW trending compactive axis except for data of compactive cleavage. The compactive directions for bedding folding and faulting represent a good accordance to explatin that the foldings are related to faultings. The compactive cleavage is not affected by another deformation structure. Therefore, the compactive cleavage is formed at the last stage of deformation history.