

Evolution of an ancient decollement zone and underplating mechanism.

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We carry out detail mapping using the balloon aerial photographs and structural analysis of melange have focused on folds. Then we elucidate the underplating mechanism with decollement-related deformation.

Yakushima Island is located at 60 km west from Ryukyu Arc Trench, 70 km south from the southern tip of Kyusyu Southwest Japan. The study area is located southwest part of Yakushima Island, between Nakama and Kurio village. The sandstone-shale melange appears to distribute.

Result of detail mapping and the structural analysis of melange, we distinguished two zones that have contrasting deformation styles and identified zone1 and zone2 are upper and under part of thrust anticline.

Zone1 preserve original bedding part and broken formation, but few meso-scale asymmetric folds accompanied with planeless faults and thrusts are developed. Bedding in the zone1 gradually curve toward the zone boundary and Mud intrusions and drag folds were frequently observed at boundary of the zones.

Zone2 has undergone more strong deformation than zone1, is characterized by quartz veins and pressure solution. And asymmetric lenticular sandstone and rootless folds are ubiquitously developed.

It is suggested that those deformations is formed under the decollement since asymmetric folds imply suffering simple shearing from early to late deformation. And the timing relationships between mud intrusion and other structures suggest compression and high fluid pressure by forming thrust anticline. So tectonic melange underwent simple shearing below decollement and finally accreted by thrust-anticline.