

Geologic Architecture of the Nankai accretionary Prism Based on Direct Observation Along the Tenryu Submarine Canyon

Kiichiro Kawamura[1]; Yujiro Ogawa[2]; Ryo Anma[3]; Shipboard Scientific Party YK05-08 Leg2[4]

[1] FGI; [2] Earth Evolution Sciences, Univ. Tsukuba; [3] Life-Environment, Tsukuba Univ.; [4] -

<http://www.fgi.or.jp>

YK05-08 Leg2 Shipboard Scientific Party: YOKOYAMA Shunji (Kochi University), KAWAKAMI Shunsuke (GSJ), Yildirim Dilek (Miami University), Gregory F. Moore (University of Hawaii)

Shinkai 6500 were dived seven times along the Tenryu Submarine Canyon during the cruise YK05-08 from 20 June to 8 July 2005. Because the Tenryu Submarine Canyon erodes the Nankai accretionary prism by maximum relative height 800 meters, the geologic architectures of the present accretionary prism are exposed widely at both sidewalls of the canyon.

The Nankai accretionary prism exposed along the canyon is basically horizontal and/or gently south dipping turbidite layers, which are dislocated by both thrusts and normal faults under the unconsolidated conditions. The fracture cleavages and cracks are formed in the accretionary prism during formation of the thrust-anticline structures under the semi-consolidated conditions. Along the Tokai thrust, which is one of the largest out-of-sequence thrusts in the Nankai prism, we collected unique rock samples as follows. One is very hard rock, that uniaxial compression strength of the rock samples is approximately 10 times more than that of the rock samples from the prism. The other is a metamorphic rock, which is closely similar to a phyllite. These rock samples indicate that the rocks exhumed from deeper levels in the prism along the thrust. In future study, we discuss the process and mechanism of the accretion including such a unique uplift using the data of microfossil and physical properties.