

SSS019-P04

会場:コンベンションホール

時間: 5月23日17:15-18:45

Fabric variation and primary heterogeneity of subduction input, off Kii Peninsula: Preliminary results from IODP Expedition

Fabric variation and primary heterogeneity of subduction input, off Kii Peninsula: Preliminary results from IODP Expedition

山本 由弦^{1*}, 北村 有迅², 小田 啓邦³, Xixi⁴, Huaichun Wu⁵, 金松 敏也¹,
Mike B. Underwood⁶, 斎藤 実篤¹, 久保雄介⁷, IODP Expedition 322 Scientist⁸

Yuzuru Yamamoto^{1*}, Yujin Kitamura², Hirokuni Oda³, Zhao⁴, Huaichun Wu⁵,
Toshiya Kanamatsu¹, Mike B. Underwood⁶, Saneatsu Saito¹, Yusuke Kubo⁷,
IODP Expedition 322 Scientist⁸

¹海洋研究開発機構, ²IFM, GEOMAR, ³産業技術総合研究所, ⁴カリフォルニア大学サンタクルズ校, ⁵中国地質大学,
⁶ミズーリ大学, ⁷海洋研究開発機構, ⁸IODP

¹IFREE, JAMSTEC, ²IFM, GEOMAR, ³Geological Survey of Japan, AIST, ⁴University of California, Santa Cruz,
⁵China University of Geoscience, China, ⁶University of Missouri, ⁷CDEX JAMSTEC, ⁸IODP

IODP Expedition 322 drilled the incoming sediments and oceanic crust in the Shikoku Basin on the Philippine Sea Plate, offshore the Kii Peninsula, SW Japan, for the purpose of characterization the composition, architecture, and state of sediments and upper igneous crust prior to entering the subduction system. We cored two sites (Sites C0011B and C0012A) and penetrated sediment/oceanic basement boundary (Site C0012A). Here we show the structural framework of the incoming sediment and systematic relationships between the structures, fabrics, and physical properties variation, elucidated by means of core description, Anisotropy of Magnetic Susceptibility (AMS) and onboard physical properties data.

In general, sparse and weak deformation characterize structures at Sites C0011B and C0012A as expected for input subduction sediments, as same as ODP Sites 1173 and 1177, reference sites of Nankai accretionary prism off Muroto and Ashizuri, respectively. The structural aspects here correspond with lateral extension and vertical compaction. Layer-parallel faults and dark deformation bands that are likely to have formed due to creep of soft sediments soon after sedimentation exposed only in the upper part (Units II and III in the Site C0011B and Unit III in the Site C0012A), whereas no such structures in the lower part. This distribution implies that there was no cause of deformation (e.g. tilting seafloor) when the lower sequences were deposited. High-angle faults/fractures developed in the middle to the lower part have formed in later stage, since they exhibit brittle deformation features.

Existence of the mass-transport deposits (MTDs) composed of contorted sediments and highly homogenized sediments would be essentials to document spatial distribution of sediments physical properties and state of consolidation, because their positions correspond to intervals where these properties have changed. These structural and fabric variation might be the primary control of distribution of fluid pressure and consolidation state in the sediments just prior to accretion.

キーワード:沈み込み,デコルマ,帯磁率異方性,海底地すべり, NanTro SEIZE, Expedition 322

Keywords: subduction, decollement zone, AMS, MTD, NanTro SEIZE, Expedition 322