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

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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.

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