



A 3 Kilometer Deep Window on the Interior of the Modern Nankai Accretionary Wedge: First Results from IODP Expedition 348

Harold Tobin (1), Takehiro Hirose (2), Saffer Demian (3), and the IODP Expedition 348 Shipboard Scientific Party Team

(1) Un. of Wisconsin-Madison, Dept. of Geoscience, Madison, United States (htobin@wisc.edu), (2) Kochi Core Center, JAMSTEC, Kochi, Japan (hiroset@jamstec.go.jp), (3) Department of Geosciences, The Pennsylvania State University, University Park, PA, USA (dms45@psu.edu)

IODP Site C0002 at the Nankai Trough is now the deepest hole ever drilled in scientific ocean drilling, at 3058 meters below sea floor so far, and the first hole anywhere to access the deep interior of an active convergent margin. Site C0002 is part of the NanTroSEIZE transect off the Kii-Kumano region of Japan, imaged with 3D seismic reflection and drilled on a series of Chikyu expeditions to shed light on the processes around the up-dip edge of seismogenic locking and slip. At Site C0002, riser drilling has passed through the approximately 900 m thick Kumano forearc basin and pierced the underlying Miocene age accretionary wedge. Limited coring, extensive LWD logging, and continuous observations on drill cuttings reveal the materials and processes in the deep interior of the inner wedge. Predominantly fine-grained mudstones with common turbiditic sands were encountered, complexly deformed and exhibiting well-developed scaly clay fabrics, variable bedding dip with very steep dips prevailing, and veins that become more abundant with depth. The biostratigraphic age of the sediments in the lowermost part of the hole is thought to be $\sim 9 - 11$ Ma, with an assumed age of accretion of 3-5 Ma. Physical properties suggest that the inner wedge from 1600 – 3000 mbsf has quite homogeneous properties. Evidence from borehole logging, drilling parameters, and samples for the state of stress and pore pressure in this never-before accessed tectonic environment will be presented.