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First results from coring the Nankai Trough during IODP NanTroSEIZE Stage 1 Expedition 316: A lithostratigraphic perspective

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From late 2007 to early 2008 the first stage of the IODP Nankai Trough Seismogenic Zone Experiment (NanTroSEIZE) began drilling and coring along the Nankai Trough, a plate-convergent margin where the Philippine Sea plate subducts to the northwest beneath the Eurasian plate. The NanTroSEIZE project is a multi-expedition, multi-platform, multi-stage IODP drilling program focused on understanding the mechanics of seismogenesis, rupture propagation, and tsunamigenesis along the subduction plate boundary fault and splay fault systems through direct sampling, in situ measurements, and long-term monitoring. Stage 1 of the NanTroSEIZE program began with a logging-while-drilling (LWD) expedition that serves as a geophysical baseline for the Stage 1 drilling sites (Expedition 314: LWD Transect). Expedition 315 (Megasplay Riser Pilot) sampled the accretionary prism at Site C0001 and the forearc basin (Kumano Basin) at Site C0002. Expedition 316 (Shallow Megasplay and Frontal Thrusts) targeted two shallow fault zones: (1) the main frontal thrust at the seaward edge of

the prism (Site C0006) and (2) the older prism and a shallow branch of the megasplay fault (Site C0004).

Initial results from core description, sedimentological analysis, and lithostratigraphic reconstruction of IODP Expedition 316 drill sites reveal a succession of (1) hemipelagic slope deposits, (2) accreted and uplifted materials in the hanging walls of the frontal thrust (Site C0006) and of a shallow branch of the megasplay fault at the upper accretionary prism (Site C0004) and (3) underthrust younger slope basin deposits in the footwall of the mega splay fault zone (Site C0004). Initial shipboard data allow for discussion of first preliminary hypothesis on the displacement history along the megasplay and frontal thrust faults, uplift history and sediment remobilization that will be addressed and tested during post-cruise research in the following years.