

## Lithostratigraphy of NanTroSEIZE Exp.316

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This paper introduces outline of lithostratigraphy of Exp 316 at megasplay (NT2-01) and frontal thrusts (NT1-03).

Site NT2-01I (C0004) and Site NT2-10A (C0008), targeted the uppermost 400 m below seafloor at the seaward edge of the Kumano Basin uplift (outerarc high) where the megasplay fault system branches and approaches the surface. Site C0008 is located ~1 km seaward of Site C0004.

Site NT2-01I was divided into four lithostratigraphic units as below.

Unit I (Early Pleistocene to the late Pleistocene slope-apron facies, seafloor to 78.1 mbsf) consists mainly of hemipelagic mud with minor volcanic ash and sand-silt input.

Unit II (late Pliocene accretionary prism sediment, 78.1-258.0 mbsf) consists mainly of sedimentary breccias with silty clay-stone clasts that most likely result from deposition of slumps and mass wasting along an unstable slope.

Unit III (Pliocene structurally bounded package, 258.0-307.5 mbsf) consists mainly of mudstone with scattered volcanic ash layers. Lithostratigraphy of this unit is similar to lower part of Unit II, and identified by small biostratigraphic age reverse. A larger age reversal is found at the lower boundary between Units III and IV.

Unit IV (Underthrust Pleistocene lower trench-slope basin, 307.5-398.8 mbsf) consists of fine-grained hemipelagic mudstones with relatively minor sand input.

Site NT2-10A was divided two lithostratigraphic units as below.

Unit I (Pleistocene to Pliocene slope basin succession, seafloor to 272.5 mbsf in Hole A and from the seafloor to the base of the hole at 176.2 mbsf in Hole C) divided into two subunits: hemipelagic mudstone with thin turbidite and volcanic ash falls of unit IA and mudstone with interbedded mudclast conglomerate layers of IIB.

Unit II (Pliocene or Miocene turbidites, 272.5 mbsf to the base of the Hole A at 329.4 mbsf, not encountered in Hole C) dominated by fine-coarse sand

Site NT1-03B (C0006) and Site NT1-03A (C0007) targets the main frontal thrust at the seaward edge of the accretionary wedge.

Site NT1-03B (C0006) was divided three lithostratigraphic units as below.

Unit I (Pleistocene trench to slope transition facies, seafloor to 27.2 mbsf) consists of a fining-upwards succession of silty clay, sand, silty sand, and rare volcanic ash layers.

Unit II (Pleistocene trench deposits, 27.2-449.7 mbsf) divided into four subunits: a sand-dominated trench wedge of IIA, mixed sand-mud trench wedge of IIB, mud-dominated trench wedge of IIC and deep marine basin to mud-dominated trench transition of IID.

Unit III (Pleistocene-Miocene deep-marine basin, 449.7 to 603.0 mbsf) consists of greenish-gray to grayish silty claystone with some interbedded volcanic ashstone layers.

Site NT1-03A was divided three lithostratigraphic units as below.

Unit I (Pleistocene hemipelagic setting) consists of a fining-upwards succession of silty clay, sand, silty sand, and rare volcanic ash layers.

Unit II (Pleistocene hemipelagic and turbidite setting) is divided into four subunits based mainly on variations in silt, sand, and gravel content. The unit displays a general coarsening-upward trend marked by a progressive increase in silt, sand, and gravel content up section. This unit is structurally complex with a number of thrust faults causing significant repetition of the sequence.

Unit III (Pliocene, 362.26-439.44 mbsf) consists of greenish-gray claystone and silty claystone with interbedded volcanic ash layers, and this unit is exaggerated by repetition of parts of the unit along thrust faults.

Unit IV (Pleistocene underthrust part of the trench wedge, 439.4-484.4 mbsf) was encountered below a low-angle thrust fault observed on seismic sections.

This work has been done by member of sedimentologist group of Exp. 316 as below.

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