Japan Geoscience Union Meeting 2010
(May 23-28 2010 at Makuhari, Chiba, Japan)

MIS002-P06 Room: Convention Hall Time: May 25 17:15-18:45

Facies variation of tsunami deposits on the mega-trench wall in Nemuro lowland along the Kuril subduction zone

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We observed continuous facies change of tsunami deposits on a mega-trench wall (100m length and 8m depth) in Nemuro lowland along the Kuril subduction zone, eastern Hokkaido, Japan. According to our stratigraphic methods such as tephrochronology and AMS14C dating, we identified 14 tsunami sands (NS1-14 beds) and two event sands in marsh deposits since ca. 5-6 ka. According to our sedimentological observations, these tsunami sands only derived from the Tomoshiri beach, and although they do not show clear graded bedding because of a single source. Also they commonly have convolution structures and erosion bases and internal bed forms such as antidune, plane bed, dune, and current ripple, reflecting bedload transportation on the marsh environment. Especially, bed thickness of NS13 clearly shows landward decreasing from 90 cm to 10 cm related to a typical facies change on the trench wall. On the other hand, we found NS14 tsunami sand accompanied with debris flow deposit. It clearly means NS14 bed was seismic origin.

Keywords: megatrench, tsunami deposit, facies change, Nemuro lowland, Tomoshiri beach, debris flow deposit