# Magnetic fabrics in the mass transport deposits in the Nankai Trough

*Yujin Kitamura[1]

1.Department of Earth and Environmental Sciences, Graduate School of Science and Engineering, Kagoshima University

We review the results of magnetic fabric analysis in the sediments recovered in the Nankai subduction margin off the Kii Peninsula, Japan using the anisotropy of magnetic susceptibility measurements. Samples were taken from the cores at IODP Sites C0011 and C0012 recovered during IODP Expeditions 322 and 333, which retrieved sediments from the seafloor to just above the basalts. The samples exhibit different behavior from those expected for undeformed deep-sea sediments. The degree of anisotropy of the magnetic ellipsoids is small and constant from the surface down to ~250 and ~80 mbsf at Sites C0011 and C0012, respectively. The flattening parameter F start increasing with depth in Unit II indicating flattening in the lower units. A zone of anomalously constant porosity is noted in the upper portion of the sites. These observations suggest that compaction is obstructed in the shallow sediments. This supposedly rigid sediment interval may influence the initiation of deformation when the sediments reach the deformation front. Such pre-existing heterogeneity may be one constraint on the deformation along the plate boundary from the trench through the seismogenic zone.

Keywords: mass transport deposits (MTD), anisotropy of magnetic susceptibility, accretionary prism

 