Japan Geoscience Union Meeting 2011
(May 22-27 2011 at Makuhari, Chiba, Japan)

MIS022-P08 Room:Convention Hall Time:May 23 14:00-16:30

Magnetic fabric of sediments in a pre-subducting oceanic plate: results from IODP Expedition 322, Sites C0011 and C0012

Yujin Kitamura[1*], Yuzuru Yamamoto[1], Toshiya Kanamatsu[1]

[1]IFREE, JAMSTEC

Recent progress of Nankai Trough Seismogenic Zone Experiment (NanTroSEIZE) has revealed dramatic segregation in stress and strain across the transect of Nankai accretionary prism. According to the results from the Integrated Ocean Drilling Program (IODP) Expedition 316, magnetic fabrics at the prism toe (Sites C0006 and C0007) was represented by typical vertical and horizontal maximum principle strain axis in the upper and lower part of the boreholes, respectively. The question arose was how that lower horizontal compression zone extends seaward, which can also be a clue to understand propagation of the decollement and/or initiation of deformation in the subducting sediments. Here we present preliminary results of magnetic fabric analysis of the presubducting sediments at Sites C0011 and C0012 recovered during Expedition 322. Results show generally oblate magnetic ellipsoids throughout the holes with slight increase in the degree of anisotropy. The minimum axis of the magnetic ellipsoid (K3) shows very steep inclination in both Sites C0011 and C0012, which suggests that the horizontal compression observed in Sites C0006 and C0007 does not extend to these input sites. The slight difference in the K3 between upper and lower part at Site C0012 may reflect the tectonic history at this unique location of the top of Kashinosaki Knoll, however, further investigation is necessary for discussion.

Keywords: Nankai Trough, NanTroSEIZE, accretionary complex, D/V Chikyu, Anisotropy of magnetic susceptibility