



Stress direction from S-anisotropy -Results from logging at site C0009 of IODP expedition 319, NanTroSEIZE

Hisao Ito

CDEX, JAMSTEC, Yokohama, Japan (hisaoito2001@yahoo.co.jp/+81-45-778-5744)

As part of the NanTroSEIZE program, operations during IODP Expedition 319 at Site C0009 in the Kumano forearc basin. Logging (including FMI-Sonic Scanner) and downhole experiments were conducted. The Sonic Scanner is the latest sonic tool which enable us to determine P and S anisotropy with cross dipole sensors. Both V_p and V_s were determined by coherence methods on board. We analyzed the Sonic Scanner data to study S wave anisotropy. Dispersion analysis was applied to distinguish the stress induced anisotropy, intrinsic anisotropy or homogeneous. We find that stress induced anisotropy is dominant for almost entire depth interval. We also found intrinsic anisotropy for a limited depth interval. Anisotropy direction is almost N~W, which is almost in agreement with stress direction estimated from borehole breakouts for the depth shallower than 1280 mbsf (which corresponds to Unit IIIA and IIIB). For the depth interval deeper than 1280 mbsf, which corresponds to Unit IV:accretionary prism, the data quality was not enough to infer the anisotropy. However we might find slight S anisotropy azimuth rotation. The amount of stress anisotropy is 5~8 %.