

Stratigraphy of seismo-turbidite assisted by paleomagnetic secular variation in 2011 Tohoku-oki earthquake rupture zone

KANAMATSU, Toshiya^{1*} ; USAMI, Kazuko² ; IKEHARA, Ken² ; MCHUGH, Cecilia³

¹JAMSTEC, ²AIST, ³City University of New York

Turbidite sequences trapped in the lower slope terrace at 4000-6000 m water depth were collected for 300 kilometers along the Japan Trench in order to reconstruct earthquake occurrences of the Tohoku region Northern Japan. The major lithology obtained in the cores is diatomaceous hemipelagic clay interbedded with turbidite layers. Hr-FP tephra patches/layers derived from the Honshu arc during 500-600 years A.D. (Usami et al., 2014) were identified in the cores. We measured NRMs in 23 of the cores so far. The magnetizations are generally stable to A.F. demagnetizations. The variation of declination shows a systematic shift within 60 degrees. A comparison of the data to references, which are archeomagnetic and sediment paleomagnetic data during the past 3000 years, show a good agreement of the data to the references. The secular variations of the cores hopefully will contribute to date the seismo-turbidite stratigraphy.

Keywords: The 2011 off the Pacific coast of Tohoku Earthquake, Japan Trench, turbidite, paleomagnetic secular variation