

Observational study of thermal effects of bottom water temperature variation on heat flow measurement at sea bottom

Osamu Matsubayashi[1], Makoto Yamano[2]

[1] GSJ, AIST, MITI, [2] ERI, Univ. Tokyo

We report our new observational data for two cases of significant effect of bottom water temperature variation upon the heat flow measurement at relatively shallow ocean waters. One site is off Tokai with water depth of 1230m, and the other is off Cape Muroto with water depth of 2026m. Instruments used were 2 meter-long heat flow probes in both cases, having a magnetic induction type connector at the site off Tokai, and cable-cutter at the other site. If we consider the water temperature data taken by us independently, obtained time series of sediment temperature are of very good quality and show that thermal noises due to bottom water variation are attenuated gradually depending on the depth below seafloor, and also that phase delays are in concordance with the thermal conduction model.