

Application of a sea bottom electric sounding method to ground-water discharge study at the offshore Kurobe alluvial fan.

Makoto Inoue[1], Tomochika Tokunaga[2], Tomohiro Nakata[3], Masaru Toida[4]

[1] ROCK ENGINEERING CENTER, [2] Dept. Geosystem Eng., Univ. Tokyo, [3] Geosystem Eng., Univ. Tokyo, [4] Kajima Technical Research Institute, Civil Engineering Department

Electrokinetic potential can be produced at around the place where submarine fresh groundwater discharges to sea because there exists large differences of salinity between seawater and discharged fresh groundwater. Thus, it is expected that anomalies of spontaneous potential (SP) can be observed at around the points by measuring distribution of SP at the sea bottom. In this study, we conducted a sea bottom electric sounding survey and measurements of SP at the offshore Kurobe alluvial fan where fresh groundwater discharges have been reported by Tokunaga et al. (2001). Our results showed that locations of SP anomalies measured at 1 to 3 m electrodes distances coincided with those of fresh groundwater discharge, indicating that this method can be used to find major discharge locations.