

Distribution of thermal conductivity of marine sediment in the eastern and western Nankai Trough subduction areas

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We developed new inversion technique to estimate simultaneously thermal conductivity and diffusivity of marine sediment using the onboard needle probe method and in-situ method. From 1996 to 2001, heat flow measurements and sediment core recovery using a piston corer were carried out in the western and eastern Nankai Trough. This technique was adapted to the temperature data that were measured using the in-situ and needle probe methods in both regions. Thermal conductivities and diffusivities estimated from both measurement methods are in good agreement each other. In both regions, distributions of thermal conductivity were divided into several sub-regions, suggesting environmental differences of sediment before and after accretionary process.