

Determination of frictional heat in the shallow portion of megasplay thrust in the Nankai Trough

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A megasplay thrust, branching from the plate subduction boundary, in the Nankai Trough is thought to cause a large tsunami at past Tonankai earthquake. To assess this, we analyzed the fluid-mobile minor element components, Sr isotope, magnetic minerals, inorganic carbon content, and raman spectra of carbonaceous materials of samples from the primary slip zone, observed at the Site C0004 by Integrated Ocean Drilling Program Expedition 316, and its surrounding rocks. On the basis of these results, we found the shallow portion of the megasplay thrust has not experienced high temperature. We also performed numerical analyses of frictional heating and thermal diffusion, and found that slip rate is one of parameters effective to frictional heat. These analytical and numerical results may indicate that the megasplay thrust near the sea floor did not and will not slip drastically.