

Geologic structures and fluid flow of the Nankai accretionary prism along the Shionomisaki and Tenryu submarine canyons

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Total 14 dives were done by Shinkai 6500 and Kaiko along the Shionomisaki and Tenryu submarine canyons of the Nankai accretionary prism during the cruise YK05-08 Leg 2 of JAMSTEC and previous cruises. Full exposures in the 1 km relief along these canyons presented detail internal structures, ranging from folds, faults (normal and reverse), fractures and cleavages, in addition to calcite mineral veins and cements. Various data on the chemosynthetic biocommunities, paleotemperature, and mode of deformation suggest that those from the submarine canyons differ from those from the surface of the prism, suggesting much higher temperature affecting the deformation and fluid migration. Phyllitic rock, indicating paleotemperature as 260 degrees Celcius, was collected along the Tokai thrust (possible OOST), indicating rather deep material was brought along this fault.

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