

## Considerable factor of decollement propagation, an example of Nankai accretionary prism

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Nankai accretionary prism were examined using core and logging while drilling (LWD) data collected during Ocean Drilling Program Legs 190 and 196 and found that smectite-illite mixed layer have been cemented at Site1173 same interval of decollement zone. These weak cementation caused by early diagenesis effects had been collapsed isotropically at decollement zone interval of Site1174. Internal structures of decollement fault breccias are sheared little but their surface.

These features of sediments can be explained by stress history of deformation front. The deformation front between site1173 to site1174, the maximum stress direction have to turn horizontal. from vertical. During this change, some place of there must have stress condition under the intermediate stress is almost same as the maximum stress. This condition does not mean only transition point of the stress direction change but the condition as the strike-slip deformation. Under this situation, the minimum and intermediate stress directions are not settled but turn around by external factors, which are caused by ocean plate geometry and/or lateral sedimental differences. These are the reason of the sediments had collapsed isotropically at the decollement interval of Site1174.

However, the isotropic compaction under the isotropic stress condition must occur some depth (some vertical stress caused by overburden) correlating with some lateral remote stress, so that the isotropic stress condition is necessary condition but not sufficient condition. Introducing the pore pressure condition, the sufficient condition of decollement producing is described. The features of the decollement interval of Site1174 is defined by collapsing sediments, which are impermeable. Permeability of the sediments are too small to dewater then the sediments immediately increase own internal pore pressure. Once such impermeable zone are made, it leads more and more pore pressure generation continuously. Moreover, the lower subsequence sediments of the isotropic stress condition are under the vertical compaction condition, the pore fluid of them can not pass across the decollement. In total, both compactive strata existence and isotropic stress condition in the Nankai accretionary prism is considerable explanation of decollement propagation.