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## Stagnation of lithification owing to shear stress in slope basin, Kumano, southwest Japan

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The forearc, slope and trench basins and accretionary prisms are developed in Kumano area where is formed by subduction of the Philippine Sea plate to the northwest beneath southwest Japan. The accretionary prism growth during geologic time period, and many landslides are scattered at slope basin. The stability of the slope basin sediment will depend on geotechnical property of sediment. We investigated physical property of the surface sediment of various sedimentation settings at Kumano area.

Twelve piston and gravity core samples, 0.3 to 5 m in core length were taken from cover sediment of the Miura knoll, Kumano forearc basin, slope basin, small pockmark basin and Nankai trough. The electric resistibility is measured at 2 to 10 mm intervals, and the vane shear test has been carried out at 5 to 30 mm intervals. The electric resistibility, depend on seawater content is an indication for porosity of sediment.

In the result, the electric resistibility and shear strength are increase with depth in all sites, however the increase ratio varied in sedimentation setting. High increase ratio was found at cover sediment of the Miura knoll where the sedimentation ratio is likely very slow. To avoid from time-effect of dewatering and sedimentation ratio, we compared between electric resistibility and shear strength. The shear strength increases with electric resistibility, and the ratio is anywhere almost the same, except the slop and pockmark basin sediments. The strength of slope basin sediment is much smaller than the others basin sediment though similar electric resistibility. The strengthening of the sediment may depend on not only time and porosity but also formation of clay mineral structure. The slope sediment may undergo shear stress in any time, and this probably causes stagnation of formation of clay mineral structure.

Keywords: Nankai, Sediment, strength, Clay mineral structure