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A preliminary result of clay mineral analysis of the TCDP core samples comparing with shallow drilled core of the Chelung-pu Fault, Taiwan

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We provide a preliminary result of clay mineral analysis of the TCDP core samples. Analyzed samples are gouges in 1109m, 1110m and 1111m depth. On the basis of XRD analyses, clay components in the samples are illite, smectite, and chlorite in the all samples, which is almost the same as the result of the shallow core of the Chelung-pu Fault.

We examined Fe-Mg content in Chlorite using peaks of XRD chart. In the TCDP case, I(003)/I(005) of Chlorite represents higher value than that of the shallow core, indicating that the number of Fe in hydroxide layer is larger than that of shallow case.

The Fe-Mg content in chlorite is considered to be controlled by temperature and pH of fluid. The result in this study suggests that another conditions in temperature and fluid pH might be existed in the deeper fault (at the time of faulting?) core comparing to the shallow case.