



Hydrologic properties related to fault propagation into surface cover of thick alluvial materials: The Chihshang Fault in Eastern Taiwan

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Pore pressure plays an important role in a fault system. Seismic events may be triggered by changes in the pore pressure of the fault zone or by aquifers' loading variations. Surely, stress and fluid pressure conditions in fault zones may induce seismic and aseismic slip at various depths. The main factors in triggering fault slip are stress accumulations and fluid pressures increasing, which may speed rupture by reducing fault strength. At shallow fault zone aquifers, hydrospheric mass changes exert direct influence over lithospheric deformation. Both seasonal and long-term changes to ice, snow or water loads may induce displacements of the Earth's surface. In our study, we focus on the Longitudinal Valley Fault in eastern Taiwan. The aim of the study is to build up a hydro-geological model of the Longitudinal Valley Fault zone, which is based on the investigation of seasonal groundwater level changes and hydraulic parameters, in order to better understand the relationship between the seasonal groundwater variation and fault displacements.