

## Fault or landslide creeping at Tapo, frontal deformation of Chihshang active fault in eastern Taiwan

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The Chihshang fault forms the south-central segment of the Longitudinal Valley fault, located at the suture between the Philippine Sea plate and the Eurasian plate in eastern Taiwan. In the past century, the fault ruptured twice accompanied by two moderate to large earthquakes during the 1951 Yuli earthquake with a magnitude of 7.1 and the 2003 Chengkung earthquake with a magnitude of 6.8, respectively. It is also well-known as a creep fault in the world. However, the cause of surface deformation, i.e. either fault creep or landslide creep, has been debated for decades at Tapo site where the fault trace passes. In order to resolve this disputation, both geological and geophysical methods have been performed within the past two years. To reveal the shallow subsurface structure, two survey lines for electrical resistivity tomography were conducted and 4 wells for collecting rock cores were drilled up to 30 meters at depth. To analyze and characterize fault activity, some organic layers were dated and a real-time clinometer was installed and has functioned since last May.

Keywords: active fault, Chihshang fault, creeping fault, real-time inclinometer