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精密水準測量によって検出された台東縦谷断層（台湾）の非地震性クリープ
Large aseismic creep detected by precise leveling survey at the central part of the Longitudinal valley fault, Taiwan

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Longitudinal valley faults in eastern Taiwan are commonly considered collision boundary between the Eurasian plate and Philippine sea plate. Yuili fault, one of the active segments of the longitudinal valley faults, is reverse fault with east dip. We established about 30km leveling route from Yuli to Changbin to detect the vertical deformation in detail (Murase et al. 2009). The installation interval of benchmarks near the fault area is about 100 m. Others were installed every about 300m.

The precise leveling surveys were conducted in August 2008, August 2009 and August 2010. The overview of the deformation detected in the period from 2008 to 2010 is as follows. It was detected about 3.0 cm/year uplift, referred to the west end of our route, at about 2km region across the fault. Uplift was gradually-reduced with the distance from the fault, and was 1.5 cm/year at the east coast. In the observation period, there is no significant earthquake in Yuli fault. It suggests the detected deformation as a cause for the aseismic creep motion of the Yuli fault. The deformation detected in the period from 2009 to 2010 denotes the same tendency and rate of that from 2008 to 2009. It suggests that the creeping occur at the same location of the fault with constant rate. From these deformation, the preliminary creep distribution was estimated in the Yuli fault. We adopted a two-dimensional reverse fault model to estimate the creep distribution. The fault geometry was optimized using the genetic algorithm in order to conform to the leveling data. The goodness of the fit of the examined models is determined on the basis of Akaike's information criteria (AIC; Akaike,1973).

In August 2010, we installed more three routes in Yuli and conducted them. Since it was first time to conduct the leveling survey in these new routes, we will be able to detect deformations next year. In this meeting, we will present an overview and our purpose of our observation in the new routes.

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