

Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

©2011. Japan Geoscience Union. All Rights Reserved.



HQR023-10

Room:303

Time:May 25 08:45-09:00

Relationship between slope collapse and landform evolution of active fold zone

Mamoru Koarai^{1*}, Takaki Okatani¹, Takayuki Nakano¹, Taku Komatsubara², Takahito Kuroki³

¹GSI of Japan, ²AIST, ³Fukuoka Univ. of Education

Large earthquakes occurred in Chuetsu District, such as the 2004 Niigata Prefecture Chuetsu Earthquake and the 2007 Niigata Prefecture Chuetsu-oki Earthquake. There are many active folds in Chuetsu District, and about 10cm uplift of Oginajo Anticline by the Chuetsu-oki Earthquake was detected by InSAR, and several slope collapses occurred in Nishiyama Hills. However, 0.5-1m uplift by the Chuetsu Earthquake was detected by difference between the DEM measured by photogrammetry using aerial photos taken before earthquake and the DEM by airborne laser survey measured after earthquake, and many slope collapses and landslides by earthquake are concentrated in Imokawa-River region. The authors try to survey the relationship between the growth of active fold by earthquake and the concentration of slope collapses by earthquake.

There is no terrace which is older than 15ka along Imokawa-River, because uplifting ratio of Imokawa-River region is large. As the relative elevation between oldest terrace and river bed is 20m in downstream and 30m in upstream, uplift ratio is 1.3-2 mm/year. If amount of uplift of the Chuetsu Earthquake is about 1m, the cycle of one earthquake would be 500-770 years. This research is supported by Grants in Aid for Scientific Research (22500994).

Keywords: active fold, slope collapse, Chuetsu Earthquake, Chuetsu-oki Earthquake, Imokawa River, Nishiyama Hills