Oral | Symbol H (Human Geosciences) | H-DS Disaster geosciences

[H-DS29_28AM1]Geohazards in humid, tectonically active countries and their precursors

Convener:*Masahiro Chigira(Disaster Prevention Research Institute, Kyoto University), Satoru Kojima(Department of Civil Engineering, Gifu University), Hiroshi YAGI(Faculty of Art, Science and Education, Yamagata University), Taro Uchida(National Institute for Land and Infrastructure Management), Chair:Ryoko Nishii(University of Tsukuba), Shintaro Yamasaki(Kitami Institute of Technology)

Mon. Apr 28, 2014 10:00 AM - 10:45 AM 415 (4F)

This session covers mass movements of landslide, slope failure, debris flow, and gravitational slope deformation in tectonically active, humid countries, and aims to discuss on their mechanisms, characteristics of occurrence sites, the significance in geological time scale, and the methodology to mitigate their affects by researchers with various related research fields.

10:00 AM - 10:15 AM

[HDS29-P04_PG]Gravitational rock deformation since the late Pleistocene on the Hounose-dendeiro Ridge, the southern Kanto Mountains

3-min talk in an oral session

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Keywords:Shimanto Group, Linear depression, Toppling, Buckling, Tephra, 14C age

We describe the geology and geomorphology related to gravitational rock deformation on the Hounose-denndeiro Ridge(HB), the upper Tama River Basin. HB is a broad ridge line 200 to 300 m wide running from northwest to southeast, and its altitudinal range spans from 1050 m to 1180 m ASL. The bedrock geology of HB is Cretaceous sedimentary rocks of Shimanto Group that generally show NE-SE strike and east dip at 60 to 80 degrees.Linear depressions and step-like slopes both parallel to HB are present on and around the ridge-top. Depth and length of depressions are usually less than 20 m and several tens to hundreds meters in many cases. Features of valley bulging with downhill-facing scarp and gentle slopes are also found from valley side slopes immediately below ridge-top linear depressions and step-like slopes . In the area of gravitational slope deformation where bulging features occur, rock deformation caused by toppling and buckling can be observed.We recovered sediment drill cores in the linear depressions on HB (P1 and P2). The bottom of surficial humic soil gave 4.1-4.3 cal ka (P1, -64 cm) and 9.5-9.8 cal ka (P2, -162 cm). Also a vitric ash layer Aira-Tanzawa (30 ka) was found from -153 cm (P1) and -325 cm (P2). In addition, a patch of pumice grain of Ontake-Ina (93 ka) was discovered at -709 cm of P2. These facts indicate that linear depressions as depositional sinks on HB were already formed before 30 ka at P1 and before 93 ka at P2.