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-P03_PG]Cause and age of the Yabusawa Gravel in the northern foot of Mount Senjo, the Akaishi Range, Japan: a reappraisal

3-min talk in an oral session

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Keywords:Shimanto group, Rock avalanche, Terrestrial cosmogenic nuclides, Holocene

The Yabusawa gravel (YG) consists of poorly-sorted thick angular clasts of sand stone, mud stone, and hornfels, forming a geomorphic feature like fluvial terraces along Yabusawa River from Mount Senjo. The previous authors had considered that YG was of glaciofluvial or large landslide origin. However, there is no clear consensus as to the origin and age of YG. We therefore carried out new analysis of geology, geomorphology, and geochronology of YG. The following results were obtained. On the outcrop walls of YG, rock clasts clearly exhibit jigsaw crack structures, although specific sedimentary facies reflecting fluvial processes such as lamination and imbrication are not observed at all. A lithotype of rock clasts in YG is almost restricted to single geology at a given outcrop locality. Surficial topography of YG has hummocks and levee-like terrain. Terrestrial cosmogenic nuclide dating of sandstone fragments obtained from three localities apart from each other gave 10.3-8.4 ka, 10.0-8.1 ka, and 9.4-7.6 ka (in ^{10}Be scale). On the basis of these facts, we concluded that YG was produced by catastrophic rock slide (rock avalanche) in the early Holocene as single event. Although the previous authors stressed degradation of mountain permafrost for landslide occurrence, we invite attention to paleoearthquakes caused by nearby active faults or convergent plate margins as well as early Holocene pluvial climate and long-term gravitational rock deformation. A multidisciplinary study for better understanding of basic factors, onset triggers, kinematic behavior of landslide is further required