Geohazards in humid, tectonically active countries and their precursors

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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

Occurrence of large landslides in past 40 years and sediment supply in the southern Japanese Alps

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Many large landslides are distributed in the southern Japanese Alps which consists of high relief and steep slopes. A lot of sediments deposited in dams suggest that sediments are produced actively in upper streams. To evaluate the sediment supply from landslides, this study addressed the mapping of landslides (>10000 m²) in Ooi River and Hayakawa River (total area is 862 km²) using aerial photographs and orthophotographs in 1970s and 2000s (partly including 2010s). In addition, we computed the volume of sediment supply in several large landslides based on the difference between DEMs from LiDAR data in multiple shooting periods. One hundred eighty landslides were extracted from photographs in 2000s to 2010s. The comparison between the distribution maps of landslides in 1970s and 2000s indicated that an initial large landslide (>100000 m²) had not occurred since 1970s. In contrast, some landslides had enlarged gradually. Erosion rate computed from LiDAR data indicated the order of 10⁻¹ to 10⁻² m yr⁻¹. Such erosion rate suggests that the bare grounds after landslides are important as sediment supply area.