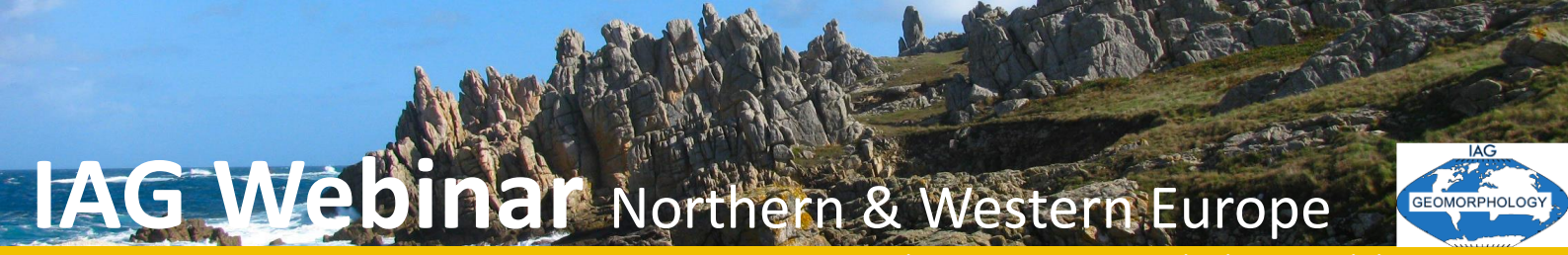

IAG Webinar Northern & Western Europe

6 March 2025 at 14:00–16:00 CET

Coordinators: Katja Laute and Achim A. Beylich
Geomorphological Field Laboratory (GFL), Selbustrand, Norway

INTERNATIONAL GEOMORPHOLOGY WEEK 2025

14:05–14:25

From debris to vital asset, the evolving role of instream large wood

Diego Panici, University of Exeter, Centre for Resilience in Environment, Water and Waste, UK

Large wood, once considered debris and flood hazard, has been rediscovered as a key component of river restoration and natural flood management. While large wood can pose risks to infrastructure, it also provides significant ecological, geomorphic, and hydrological benefits, enhancing biodiversity and resilience. Despite this dual role, large wood now integrates natural processes to restore river systems and provide both function and structure to fluvial geomorphic and hydrological features. Case studies highlight challenges and benefits of large wood in rivers, with the upshot that with effective management, large wood can support ecosystem health while reducing risks to human infrastructure.

14:25–14:45

Unstable Slopes and Shifting Landscapes: Landslides in the East African Rift

Antoine Dille, Royal Museum for Central Africa, Department of Earth Sciences, Tervuren, Belgium

Landslides are both a significant hazard and a key force shaping landscapes in tropical regions, yet their triggers, dynamics and long-term impacts remain poorly understood. The East African Rift, where tectonic, climatic, and anthropogenic forces intersect, is a global hotspot for environmental change and the increasing occurrence of geo-hydrological hazards such as landslides. Drawing on long-standing collaborations with local institutions, extensive regional experience, satellite remote sensing, citizen observations, and a unique archive of historical aerial images, we examine the interplay of natural and human-induced factors in slope instability, providing critical insights for risk assessment and land-use planning in this rapidly evolving landscape.

14:45–15:05

DeltaSense: Scaling Up Remote Sensing for Land and Water Resilience in the Great Lakes Region

Ivan Lizaga, Isotope Bioscience Laboratory, Ghent University, Belgium

The Great Lakes region of Africa is experiencing severe land degradation due to deforestation, unsustainable agriculture, urban expansion, and violent conflicts. Inland deltas act as key indicators of these environmental changes, reflecting the long-term impacts of human activity on landscapes. This project leverages satellite data and delta dynamics to identify degradation hotspots, linking environmental shifts to geopolitical factors, migration, and resource management. By integrating remote sensing with local knowledge, we aim to develop solutions for sustainable land use, water conservation, and climate resilience. Our findings will provide actionable insights to help policymakers, communities, and organizations restore degraded ecosystems and secure vital resources.

15:05–15:25

Late Pleistocene-Holocene fluvio-palustrine records from the Khaybar basaltic lava field (NW Arabia): hydro-geomorphologic, climatic and archeaological implications

Bruno Depreux, University of Lyon, Archéorient UMR 5133, France

In Arabia, Quaternary climate fluctuated between arid and humid periods, significantly influencing human settlement patterns. The study of humid phases, characterised by increased precipitation and intensified fluvio-lacustrine activity, is a key objective for understanding human-environment interactions. Fluvial archives are particularly valuable for assessing local hydrosystem responses to climate change and the availability of water resources. Here, we present fluvio-palustrine records from the Khaybar oasis and discuss the sedimentological facies and chronology associated with this fluvial activity, as well as its spatial distribution and hydro-climatic significance. Finally, these aspects will be examined in relation to the archaeological occupations of the region.

15:25–15:45

Using robust multivariate statistics to exploit multi-proxy datasets in geomorphological research: An example from the Schwalbenberg Loess-Palaeosol-Sequence (Middle Rhine Valley, Germany) – A key site for the Upper Pleistocene in western Central Europe

Mathias Vinnepand, University of Rennes, Géosciences Rennes, France

As geomorphologists, we frequently generate large multivariate datasets but only use a fraction of these to deduce evidence for (geomorphological) processes. This strongly limits our perspectives and poses the risk to overlook processes that may have operated during the sediment archives' formation. Here we present a process-based strategy that applies principle component analyses to multi-proxy datasets (pre-filtered according to stratigraphic units) of the Schwalbenberg Loess-Palaeosol-Sequence (LPS) covering the Upper Pleistocene. Through this, a decoding of interfering signals (e.g. provenance and weathering) is achieved on a broad data-basis. This is a key for comprehending terrestrial system responses across western Central Europe.

15:45–16:00 Final discussion and final remarks