



# IAG Webinar Central & Eastern Europe



Thursday, March 4, 2021; 14:00-18:35 CET

Coordinators:

Piotr Migon

Konstantinos Vouvalidis

Mihai Micu

14:00-14:10

Welcome address: Mauro SOLDATI (IAG President), Susan CONWAY (IAG Vice-President)



Katerina GERANKINA  
Lomonosov State Univ.  
RUSSIA

14:10-14:35

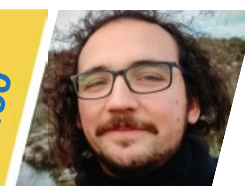
## Interfluvial landscapes of Central European Uplands: glacial heritage vs. postglacial metamorphosis

Glacial uplands formed by the Middle Weichselian ice cover are referred as being relatively stable ever since except for periods of erosional incising. However, investigating postglacial cover of interfluvial landscapes we revealed major shifts in the set and dynamics of geomorphic agents those have substantially shaped their exterior during the Late Pleistocene and Holocene. Prolonged lacustrine sedimentation and several intensifications of slope mass movement have significantly lowered relative elevations of glacial interfluves. Penetrated by a sequence of distinct cryogenic relicts and incorporating series of paleopedogenic features these strata display a potential to be reliable archives for detailed paleogeographic reconstructions.

## Morphodynamics and flow interactions of deltaic wave-influenced river mouths

Abstract At the mouths of river deltas floods bring massive amounts of sediments, but coastal storms with large waves remobilize these sediments and cause erosion. This interaction between the river and the sea taking place at river mouths, imposes the future evolution and resilience of deltas in the face of rising sea levels, climate change and human pressures. By analyzing annual bathymetric changes based on surveys at the Sfântu Gheorghe Danube river mouth, we found that bathymetric changes are controlled by a Flood/Storm index. Furthermore, the results of a numerical exercise that aimed to model hydrodynamics at idealized river mouth configurations on a full range of discharge and wave conditions will be presented.

14:35-15:00



Florin ZĂINESCU  
University of Bucharest,  
ROMANIA



Wioleta PORĘBNA  
University of Wrocław,  
POLAND

15:00-15:25

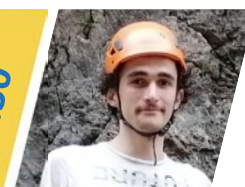
## Geomorphometric characteristics of cleft-and, -valley systems: insights from studies on valley network in sandstone tablelands

Sandstone tablelands form some of the world's most spectacular and distinctive relief, often protected as National Parks or nature reserves, like those in Central Europe. While erosional topography in sandstone tablelands is typified by a range of distinctive landforms which combine into complex, extremely rugged relief, drainage networks in sandstone landscapes seem under-researched. Specific features of valley networks, both at the scale of individual landforms as well as larger tracts of relief, can be demonstrated using geomorphometric approach. With high-resolution DEMs and GIS tools available, boulder-filled canyons and dense forest cover are no longer barriers to understand the controls of valley network.

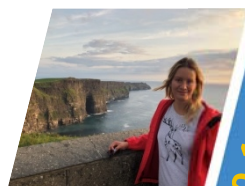
## Recent development of a windy glacier glacial marginal zone and maritime periglaciation (South Shetland Islands, Antarctic)

The aim of this study was to identify, map and quantify glacial and periglacial landforms developed in front of Windy Glacier (King George Island, South Shetland Islands), which recently turned from being tidewater to land-terminating. The study is based on images obtained during a UAV BVLOS photogrammetric survey. Littoral, fluvial and glacial landforms dominate up to 64-76 m a.s.l., above there is a periglacial domain with solifluction landforms and sorted patterned ground. Distinction between flutes and small drumlins is shown and reference to previous geomorphological mapping on King George Island is presented.

15:25-15:50



Kacper KRECZMER  
University of Warsaw,  
POLAND



Ekaterina  
MATLAKHOVA  
Lomonosov State Univ.  
RUSSIA

15:50-16:15

## Paleohydrological extreme events in the river valleys of the central part of the East European Plain in the Late Pleistocene

The relicts of large meandering palaeochannels (macromeanders, with width few times larger than the modern ones) are found in the river valleys of the East European Plain. The main aim of our study was establishing of absolute chronology of macromeanders formation and periodization of the phase of extremely high river flow in the Central part of the East European Plain in the Late Pleistocene. River incision was detected about 30-35 ka BP. LGM time was characterized by cryoaridic conditions, low runoff and accumulation in the river valleys. After LGM the high runoff epoch started, which was dated 12-19 ka BP. In that time macromeanders were formed. Runoff in Holocene was lower than in Late Pleistocene.

INTERNATIONAL GEOMORPHOLOGY WEEK 2021





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INTERNATIONAL GEOMORPHOLOGY WEEK 2021



**Kristýna SCHUCHOVÁ**  
University of Ostrava,  
CZECHIA

16:30-16:55

## Geomorphology of old and abandoned underground slate mines (Nížký Jeseník Upland, Czechia)

This presentation brings the results of complex geomorphological investigations of underground abandoned slate mines. It proposes an overview of the respective geomorphic forms, puts them into context with geological and geomorphological processes, and classifies their origin and evolution from a spatial and temporal point of view. For this study, the area of the Nížký Jeseník Upland in Czechia was chosen for the preservation and natural character of the mines.

## Tectonic geomorphology as a tool in seismic hazard assessment: study of deformations in karst caves of East Serbian Carpatho-Balkanides

Methods to determine seismic hazard in a region vary but can be roughly grouped into two main groups: one based on probabilistic methods, and another, which is based on data related to the faulting processes and determination of seismically active faults. Here, we present evidence about the youngest and recently active faults in the region of Carpatho-Balkanides in Serbia, based on tectono-geomorphological data from karst caves. Results show that the area is characterized by strike-slip tectonics, most likely resulting from far-field stress generated by the collision of the Adriatic microplate, the Moesian indenter and the tectonic units in-between.

16:55-17:20



**Ana MLADENović**  
University of Belgrade,  
SERBIA



**Olena IVANIK**  
Taras Shevchenko National  
University of Kyiv,  
UKRAINE

17:20-17:45

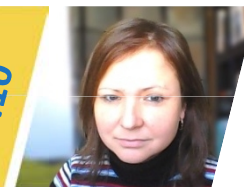
## Geomorphological and geological factors of natural hazards in the Ukrainian Carpathians

The consideration is given to geological and geomorphological factors of natural hazards in the Ukrainian Carpathians. These processes have great impact on people's livelihoods and infrastructure. Principal impact of rock lithology, geomorphological structure, hydrogeological regime and seismic processes on the erosion, landslides and flooding is discussed. An integrated approach for the landslide hazard assessment is proposed. Results of this research are used for infrastructure planning and risk assessment.

## Intensity of chemical denudation by limestone plates experiment (case study Slovak karst)

Over 4 years, we observed changes at two sites at three different depths, for a total of 18 plates at each site. Our results show an apparent weight loss at all samples of both sites of varying intensity. One of the most important factors affecting the intensity of denudation is the amount of precipitation in the area and the value of runoff. The quality of the limestone, its purity and porosity allow faster dissolution. The depth of the root system, the chemical and physical properties of the soil and the CO<sub>2</sub> soil content affect the denudation in the forested area.

17:45-18:10



**Alena GESSERT**  
Pavol Jozef Safarik Univ. Kosice  
SLOVAKIA



**Michal BŘEŽNÝ**  
University of Ostrava,  
CZECHIA

18:10-18:35

## Landslides in the Outer Western Carpathians, Czechia

Czech Flysch Outer Western Carpathians (COWC) represent region with the highest density of large landslides and deep-seated gravitational slope deformations (DSGSDs) in Czechia. Heterogeneity of the region in terms of geology (individual flysch nappes with different lithology) and topography (e.g., high monoclinical ridges in the north-eastern part with local relief > 500 m and subdued hilly landscape in the southwest) results in great diversity of the landslides, their size and also recent activity. Aim of this presentation is to show these differences and demonstrate driving factors, which cause this varied behaviour of mass movements in the region.

**18:35**

**Concluding remarks:** Piotr MIGOŃ (University of Wrocław, Poland)

Konstantinos VOVALIDIS (Aristotle University of Thessaloniki, Greece)

Mihai MICU (Romanian Academy, Romania)