HydroCarpath 2025

Hydrology of the Carpathian Basin: integrating data, experiments, models, and artificial intelligence for advancing process understanding and prediction

International conference, 4th December 2025

TU WIEN TECHNISCHE UNIVERSITÄT WIEN Vienna University of Technology

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BOKU UNIVERSITY

Hydrology of the Carpathian Basin: integrating data, experiments, models, and artificial intelligence for advancing process understanding and prediction

International conference, 4th December 2025

ORGANIZERS:
Slovak University of Technology in Bratislava, Slovakia (SUT)
University of Sopron, Hungary (UoS)
Vienna University of Technology, Austria (TUW)
Vienna Doctoral Programme on Water Resource Systems
University of Natural Resources and Life Sciences, Vienna, Austria (BOKU)

VENUE:
Gußhausstraße 25-29, 1040 Wien, 6th floor

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Zoltán Gribovszki	University of Sopron, Sopron, Hungary
Karsten Schulz	University of Natural Resources and Life Sciences, Vienna, Austria

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Abstract submission deadline: 27th October 2025
Conference: 4th December 2025

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PROGRAMME OVERVIEW:
Gußhausstraße 25-29, 1040 Wien, 6th floor

Date	Time	Programme
4th December 2025	08:30-09:00	Registration
	09:00 - 09:10	Opening: Günter Blöschl, Jan Szolgay, Zoltán Gribovszki, Hubert Holzmann
	09:10-9:30	Solicited lecture Chairman: Péter Kalicz
	09:30-10:35	1st Oral Block (5 lectures) Chairman: Péter Kalicz
	10:35-10:45	Coffee break
	10:45 -11:40	2nd Oral Block (4 lectures) Chairman: Kamila Hlavčová
	11:40-11:50	Coffee break
	11:50- 12:55	3rd Oral Block (5 lectures) Chairman: Karsten Schulz
	12:55 -13:55	Lunch break
	13:55 -15:30	Poster presentations (2-3 min time slots/per poster) Chairman: Gábor Keve, Borbála Széles, Silvia Kohnová
	15:30-16:30	Poster Session with coffee
	16:30	Closure

Abstract book available at

Detailed Programme, 4 December 2025
Gußhausstraße 25-29, 1040 Wien, 6th floor

9:10-9:30 Solicited lecture

Chairman: Péter Kalicz

Author	*Title*
Jaroslav Vido (TUZ) (20 min)	Bioclimatic Change in Slovakia's Forest Landscapes

9:30 – 10:35 1st Oral Block: Climate Change and Water Balance in Central Europe

Chairman: Péter Kalicz

Nr.	*Author*	*Title*
1	Klaudia Négyesi (BME) (13 min)	Climate-driven changes of the Danube River discharge in Hungary
2	István Juhász (UoS) (13 min)	Climate change effect on water balance in the West-Transdanubian region of Hungary
3	Paul O'Connor (TUW) (13min)	Austria's Water Balance Under a Changing Climate: Impacts of Climate Variability and Long-Term Change
4	Martin Kubáň (SUT) (13 min)	Climate risk assessment for Trnava city TRACAP project
5	Martin Bednář (BUT) (13 min)	Hydrological Modelling of the Danube Basin Using CWatM: Preliminary Results for the Morava River Basin

10:35-10:45 Coffee break

10:45-11:40 2nd Oral Block: Hydrological Modelling and Extreme Events

Chairman: Kamila Hlavčová

Nr.	*Author*	*Title*
6	Gergely Ámon (SzIU) (13 min)	Calibrating and Validating a Hydrodynamical Model of the Steep, Forested Hidegvíz Catchment in Hungary with Leaf Litter Effects
7	Elias Bögl (BOKU) (13 min)	When Complexity Counts: Performance of two different snow models coupled with the same runoff routing scheme in the karstic Zugspitz area
8	Diego Hernandez (TUW) (13 min)	Flood variability induced by atmospheric blocking in Europe and the Alps-Carpathians range
9	Aditya Nugraha Putra (SUT) (13 min)	Machine Learning-Based Assessment of Land Use Change Impacts on Drought and Water Quality in Tropical Plateau in Malang, Indonesia

11:40-11:50 **Coffee break**

11:50-12:55 **3rd Oral Block: Soil, Vegetation, and Erosion Processes**

Chairman: Karsten Schulz

Nr.	*Author*	*Title*
10	Lana Radulović (UoL) (13 min)	Characterization of throughfall dynamics across contrasting vegetation types using velocity-diameter diagrams clustering
11	Borbála Széles (TUW) (13 min)	Linking disdrometer observations with soil erosion in the Hydrological Open Air Laboratory
12	Christopher Thoma (TUW) (13 min)	Scale-dependent runoff controls and erosion hotspots in agricultural catchment sediment transport
13	Tomas Herza (BOKU) (13 min)	Visualising soil infiltration from a dye experiment to complement ERT in hydrology
14	Gábor Keve (LUPS) (13 min)	MInimizing CROssborder water contamination of microPLASTICS

12:55-13:55 **Sandwich lunch**

13:55-15:30 Poster presentations (2-3 min time slots/per poster)

Chairman: Gábor Keve, Borbála Széles, Silvia Kohnová

Nr.	*Author*	*Title*
P1	Gábor Keve (LUPS)	Results of the interception garden in Baja
P2	Katalin Anita Zagyvai-Kiss (UoS)	A simple seasonal crown and litter interception analysis of a Black Pine Forest (Sopron Botanic Garden, Hungary)
P3	Dušan Marjanović (TUW)	Impact of crops on rainfall interception in HOAL
P4	Lana Radulović (UoL)	Assessing the influence of vegetation and meteorological variables on the kinetic energy of raindrops
P5	Lili Megyer-Muraközy (UoS)	Data reconstruction of a local meteorological station in forest environment (Hermes, Hungary)

P6	Yusuf Oluwasegun Ogunfolaji (UoL)	Inter-climate comparison of the factors influencing throughfall beneath urban pine canopies
P7	Milan Onderka (RCI)	Historical Perspective on Rainfall Design in Central Europe: Methods, Applications, and Future Challenges
P8	Clara Dreier (TUW)	Time-Lag Analysis between Precipitation and Spring Discharge Events at Karst Springs
P9	Patrick Hogan (GFZ)	A Bayesian framework for improving the uncertainty quantification and robustness of scintillometer-based evaporation estimates
P10	József Szilágyi (BME)	Mapping evaporation at 1-km resolution for Hungary
P11	Mitra Tanhapour (SUT)	Potential of Satellite Snow Products for Multi-Objective Calibration of a Conceptual Hydrological Model
P12	Roberta Facchinetti (BOKU)	Validation of snow redistribution modeling with the physically-based snow model Alpine3D using Sentinel-2 satellite imagery over a 11-year period in complex alpine terrain
P13	Lynda Paulíková (SUT)	The impact of seasonality on the estimation of runoff coefficients in small catchments
P14	Anna Liová (SUT)	Comparative evaluation of control flood waves using a multivariate copula - based framework
P15	Zuzana Štefunková (SUT)	Evaluation of EURO-CORDEX Climate Scenarios for Hydrological Applications in Slovak River Basins
P16	Zahra Majid (TUW)	Performance Analysis of CORDEX RCMs for Streamflow Simulation in Upper Indus Basin
P17	Gergely Levente Kökény (UoS)	Research of the responses of beech tree stands to drought in the Eastern Bakony
P18	Igor Leščešen (SAS)	Ensemble Machine Learning Forecasts Streamflow Droughts at Danube's Smederevo Station
P19	Fatemeh Firoozi (BOKU)	A New Approach for Multivariate Drought Frequency Analysis Using Vine Copulas
P20	Abdelbagi Y. F. Adam (UoS)	Decadal and Multi-Scale Trends in Meteorological Drought: SPI vs. SPEI Across Hungary Sopron and Debrecen (1901–2023)
P21	Patrik Sleziak (SAS)	In situ measurements under different land cover and wetness conditions for validation of a soil moisture product
P22	Máté Katona (UoS)	Determination of the water retention capacity of forest soils in Transdanubia and prognosis of changes in their site conditions

P23	Csenge Nevezi (UoS)	Hydro-meteorological and surface soil moisture data collecting and processing between 2017-2025 in the Hidegvíz Valley experimental catchment, Hungary
P24	Asma Khalil (TUW)	Assessing Satellite Soil Moisture Products to Constrain Calibration of Conceptual Hydrologic Models
P25	András Szabó (UoS)	Changes in diurnal groundwater fluctuations following a poplar stand removal on the Great Hungarian Plain
P26	Katalin Anita Zagyvai-Kiss (UoS)	Impact of a log weir on groundwater in Hidegvíz Valley (Hungary)
P27	Dániel Koch (LUPS)	Investigation of Soil Water Storage and Near-Surface Flow Processes at the Magyaregregy Experimental Catchment (Hungary)
P28	Márton Dobó (UoS)	Detecting the impact of groundwater decline on forest vitality in the Great Hungarian Plain using remote sensing
P29	Peter Valent (TUW)	Microbial routing-inactivation model for the Upper Danube: multi-source inputs and multi-organism capability
P30	Natália Botková (SAS)	Effect of Microplastics on Soil Water Potential and Wilting Point Determined by WP4C Dewpoint Potentiometer
P31	Jana Grečnárová (SUT)	Experimental study of green roof retention capacity
P32	Miriam Zaťovičová (SUT)	Designing Urban Heat Adaptation through Measured Thermal Patterns of Street Geometry and Orientation
P33	Theresa Noske (TUW)	Logjam formation at bridge piers from congested wood carpets
P34	Erwan Dainche (TUW)	Wood log at bridge pier viewed as a passive rocking rod in a vortex shedding flow
P35	Attila Kálmán (SzIU)	Nature-based and community-driven backwater rehabilitation with integrated water management – case study from little Danuban plain of Hungary

15:30-16:30 Poster Session with coffee

16:30 Closure