



**BABEŞ-BOLYAI UNIVERSITY
FACULTY OF GEOGRAPHY
DEPARTMENT OF PHYSICAL AND
TECHNICAL GEOGRAPHY
and
AIR AND WATER ASSOCIATION**



in cooperation with

”SOMEŞ” S.A. WATER COMPANY CLUJ

&

“SOMEŞ - TISA” Basin Water Administration

organize

**THE INTERNATIONAL CONFERENCE
AIR AND WATER - COMPONENTS OF THE ENVIRONMENT**

16th Edition

Partners

HIDROELECTRICA CLUJ BRANCH

**22 – 24 March 2024
CLUJ-NAPOCA, ROMANIA**

SCIENTIFIC COMMITTEE

PhD. Prof. N.V. ALADIN	Laboratory of Brackish Water Research, Saint-Petersburg, Russia
PhD. Assoc. Prof. M. BELDEAN-GALEA	Babeş-Bolyai University, Cluj-Napoca, Romania
PhD. Em. Senior Scientist R. BERTONI	CNR-IRSA Water Research Institute, Verbania, Italy
PhD. Assoc. Prof. P. BREȚCAN	“Valahia” University, Târgoviște, Romania
PhD. I. CANJEVAC	University of Zagreb, Department of Geography, Croatia
PhD. V. CHENDEȘ	N.I.H.W.M., Bucharest, Romania
PhD. S. CHEVAL	"Henri Coandă" Air Force Academy Braşov / National Meteorological Administration, România
PhD. Eng. D. CIATARĂȘ	C.A. „Someș” S.A., Cluj-Napoca, Romania
PhD. Assoc. Prof. S. CÎNTĂ PÎNZARU	Babeş-Bolyai University, Cluj-Napoca, Romania
PhD. Prof. M. CURIC	University of Belgrad, Serbia
PhD. Prof. M. DEMIRCI	Iskenderun Technical University, Turkey
PhD. Cp. I. C.S. DRAGOTĂ	Romanian Academy, Institute of Geography, Bucharest
PhD. Assoc. Prof. M. ELIZBARASHVILI	"Ivane Javakhishvili" Tbilisi State Univ., Georgia
PhD. Doc. Prof. P. GĂȘTESCU	"Hyperion" University, București, Romania
PhD. Assoc. Prof. M. GEORGESCU	Arizona State University, USA
PhD. Prof. I. HAIDU	University of Lorraine, France
PhD. Prof. C. IOJĂ	University of Bucharest, Romania
PhD. Prof. Ewa ŁUPIKASZA	University of Silesia, Poland
PhD. Prof. W. MARSZELEWSKI	Nicolaus Copernicus Univ. Toruń, Poland
PhD. Prof. J. MIKA	University Eszterházy Károly, Eger, Hungary
PhD. Assoc. Prof. I. MINEA	„Al. I. Cuza” University, Iași, Romania
PhD. Assoc. Prof. F. MOLDOVAN	Babeş-Bolyai University, Cluj-Napoca, Romania
PhD. Eng. C. NEAMȚU	C.A. „Someș” S.A., Cluj-Napoca, Romania
PhD. Prof. G. PANDI	Babeş-Bolyai University, Cluj-Napoca, Romania
PhD. Prof. D. PETREA	Babeş-Bolyai University, Cluj-Napoca, Romania
Eng. I.S. RÎNDAȘU-BEURAN	„Romanian Waters” National Administration, Romania
PhD. Prof. H. SAARONI	Tel Aviv University, Israel
PhD. Assoc. Prof. L. SFÎCĂ	„Al. I. Cuza” University, Iași, Romania
PhD. M.M. SOMMERHÄUSER	Dep. of Water Manag., Emschergenossenschaft, Deutschland
PhD. Prof. V. SOROCOVSCHI	Babeş-Bolyai University, Cluj-Napoca, Romania
PhD. Res. H. TABARI	KU Leuven University, Belgium
PhD. Roman TANDLICH	Rhodes University, Grahamstown, South Africa
PhD. Prof. E. TEL-OR	Hebrew University of Jerusalem, Israel
PhD. Prof. L. TOUCHART	University of Orléans, France
PhD. J. TURNER	CSIRO Manufacturing, Australia
PhD. Prof. F. UNEȘ	Iskenderun Technical University, Turkey
PhD. Prof. L. ZAHARIA	University of Bucharest, Romania
PhD. Prof. M. ZELENKOVA	Technical University of Košice, Slovakia

ORGANIZING COMMITTEE

PhD. Assoc. Prof. Gh. ȘERBAN	Babeş-Bolyai University, Cluj-Napoca, Romania
PhD. Cs. HORVÁTH	Babeş-Bolyai University, Cluj-Napoca, Romania
PhD. R. BĂȚINAȘ	Babeş-Bolyai University, Cluj-Napoca, Romania
PhD. Prof. I. HOLOBĂCĂ	Babeş-Bolyai University, Cluj-Napoca, Romania
PhD. T. TUDOSE	Babeş-Bolyai University, Cluj-Napoca, Romania
Soc. L. CROITORU	C.A. „Someș” S.A., Cluj-Napoca, Romania

PROGRAM

Friday, March 22, 2024

- 08.00 – 09.00: *Registration (Hall 43, 1st floor)*
- 09.00 – 10.05: *Opening ceremony (Hall 43, 1st floor)*
- 10.05 – 10.30: *Coffee break (Hall 27, Groundfloor)*
- 10.30 – 12.30: *Plenary session (Hall 43, 1st floor)*
- 12.30 – 12:55: *Poster session (Hall 43 and 46, 1st floor)*
- 13.05 – 14.35: *Lunch (Haşdeu University Restaurant, Petru Friciu Hall)*
- 14.45 – 16.30: *Communication sessions*
- 16.30 – 17.00: *Coffee break (Hall 27, Groundfloor)*
- 17.00 – 17.45: *Communication sessions*
- 18.00 – 18.30: *Conclusions (Hall 43, 1st floor)*
- 19.00 – 22.00: *Official dinner (Haşdeu University Restaurant, Petru Friciu Hall)*

Saturday, March 23, 2024

08.30 – 19.30 *Field trip itinerary*

Cluj-Napoca – Gâlgăul Almaşului "Dragons Garden", Jibou "Vasile Fati" Botanical Garden, Zalău Griff Hotel (lunch), Moigrad Castrum Porolissum, Şimleul Silvaniei Wine Cellar, Vârşolţ Dam and Reservoir* – Cluj-Napoca*

Sunday, March 24, 2024

10.00 – 13.00 *Cluj-Napoca city tour*

Friday, March 22, 2024

Opening Ceremony

Hall 43, Amphitheatre „George Vâlsan”, 1st floor

- 09.00 - 09.05:** Organizers welcome, PhD. Lect. Csaba HORVATH and PhD. Lect. Răzvan BĂȚINAȘ
09.05 - 09.15: PhD. Prof. Balint MARKO - Vice-Rector of Babeș-Bolyai University
09.15 - 09.25: PhD. Assoc. Prof. Titus MAN - Dean of the Faculty of Geography
09.25 - 09.35: PhD. Dipl. Eng. Călin NEAMȚU - Presentation of ”Someș” Water Company
09.35 - 09.45: Dipl. Eng. Chem. Alexandru FEKETE - Presentation of Someș - Tisa Water Branch Administration
09.45 - 09.55: PhD. Lect. Răzvan BĂȚINAȘ - World Water Day - 2024
09.55 - 10.05: PhD. Prof. Iulian HOLOBĂCĂ - World Meteorological Day - 2024
10.05 - 10.30: **Coffee break**

Plenary Session

Hall 43, ”George Vâlsan” Amphitheatre, 1st floor

Chairmen: Simona CÎNTĂ-PÂNZARU, Ion Mirel BOGDAN

10.30 - 11.00

Katarzyna KUBIAK-WÓJCICKA: *Spatial and Temporal Patterns of Changes in Low Flows in Lowland Rivers in Poland*

11.00 – 11.30

Adina-Eliza CROITORU: *World Meteorological Organization on Research: From Top Research to Support for Member States Research Organizations*

11.30 – 12.00

Ionuț MINEA: *Hydrogeological droughts - analysis of the natural risk affecting the eastern part of Romania in the last decades*

12.00 – 12.30

Lucian SFÂCĂ: *Urban Climate Assessment: A Pre-Requisite in Designing Cities' Resilience Response to Climate Change for Romania's North-East Development Region (Project Results)*

12.30 – 12:55: *Poster session (Hall 43 and 46, 1st floor)*

13.05 – 14.35: *Lunch (”Petre Friciu” Hall, Hașdeu University Restaurant)*

Session I. Poster session

12.30 – 12.55

Hall 43 1st Floor

Chairmen: Daniel BOICU, Traian TUDOSE

1. **Oana-Elena CHELARIU**, Ionuț MINEA, Corneliu IAȚU: *A geospatial analysis of multi-hazard risk in the North-East Region of Romania*
2. **Răzvan BĂȚINAȘ**, Ionel Sorin RÎNDAȘU-BEURAN, Bogdan Gabriel PITICARI, Cristina Giorgiana ZANFIR, Simion NACU: *Assesement of Accidental Water Pollution with Mine Waters in Romania in the 2017-2023 Period*
3. Liliana ZAHARIA, Ionel Sorin RÎNDAȘU-BEURAN, **Răzvan BĂȚINAȘ**, Bogdan Gabriel PITICARI, Cristina Giorgiana ZANFIR, Simion NACU, Aurelian Cosmin MOLDOVAN: *Spatial and Temporal Analysis of Hydrological Warnings and Alerts for Immediate Phenomena for the 2022 and 2023 Years in Romania*
4. **Erika Beata Maria BEILICCI**, Robert Florin BEILICCI: *The Study of the Variation of the Hydrological Regime in a Representative Hydrographic Basin During a Hydrological Cycle*
5. **Robert Florin BEILICCI**, Erika Beata Maria BEILICCI: *Advance Hydraulic Modelling of Irrigation Systems, Study Case PROTECT AGRO BABA ANA MIZIL Irrigation System 1155 ha, Romania*
6. **Dănuț-Alexandru DUMITRU**, Simona CÎNTĂ-PÂNZARU, Frank NEKVAPIL, Tudor TAMAS, Geza LAZAR, Lucian BARBU-TUDORAN: *Biomaterials from the Black Sea and their potential for Bioeconomy*
7. **Marina IOSUB**, Florin Constantin MIHAI, Oana-Elena CHELARIU, Ionut MINEA, Dan LESENCIUC: *PET pollution patterns in the Bistrița River basin, Romania: A multi-criteria analysis approach*
8. **Adrian MIREA**: *Excess and deficit atmospheric precipitation on the territory of Oltenia*
9. **Minda Codruta BĂDĂLUȚĂ**: *Gumbel's Extreme Value Distribution for Flood Frequency Analyses of Timiș River*
10. Fania SFÎRLEAZĂ, **Adriana POPA**, Adriana BĂCESCU: *Synoptic and Climatological Analysis of Autumn 2023 from the Perspective of a Meteorologist Forecaster*

11. **Irina Monica SIMO**, Mihail Simion BELDEAN-GALEA: *Assessment of heavy metal pollution in the Cerna river basin, Hunedoara county*
12. **Andrei URZICĂ**, Alin MIHU-PINTILIE, Cristian C. STOLERIU, Dan C. LESENCIUC: *Using 2D HEC-RAS modeling for multiple major flood events (post-2000) downstream the Stânca Costești reservoir. Case study: middle floodplain sector of Prut River*

II. Water Resource Management 1

14.45 - 16.30

Hall 43 1st Floor

Chairmen: Daniela RĂDULESCU, Mustafa DEMIRCI

14.45 - 15.00

Tom SAMPSON, Daniela RĂDULESCU, **Mirel Bogdan ION**, Andrei COZMA:
Urban Pluvial Flood Risk in Romania, in the Context of Floods Directive Implementation

15.00 - 15.15

Lucian STAN, **Daniela RĂDULESCU**, Raluca CIOBANU, Cristina RIZEA, Sabin NEAȚU, Alice GHÎȚESCU: *Measures for Improving the Aquatic Biodiversity on the Lower Sector of Bega Veche River*

15.15 - 15.30

Yunus Ziya KAYA, **Mustafa DEMİRCİ**, Bestami TAŞAR, Hasan GÜZEL:
Prediction of the Dissolved Oxygen by Using Multi-Layer Perceptron and KNN Approaches: a Case Study in Coosa River, Alabama, USA

15.30 - 15.45

Daniel BOICU, Ionuț MINEA: *Groundwater Modelling Using MODFLOW*

15.45 - 16.00

Răzvan BĂTINAȘ, **Gheorghe ȘERBAN**, Daniel SABĂU, Petre BREȚCAN, Daniel DUNEA, Traian TUDOSE, Dănuț TANISLAV: *Hydrological Modeling of the Influence of Ecological Dams for the Restoration of the Water Regime of Peatlands - Case Studies*

16.00 - 16.15

Hakan VARÇIN, **Fatih ÜNEŞ**, Ercan GEMİCİ, Yunus Ziya KAYA: *Examining the Change in Pressure Parameters in the Chute Spillway with a Numerical Model*

16.15 - 16.30

Estera HADA, Ana-Maria POP, Gheorghe HOGNOGI, Răzvan BĂTINAȘ:
Perception of peatland ecosystems

16.30 - 17.00 Coffee break

**III. Climatic changes and their impact; Climatic and hydrological hazards ;
Pollution and protection of air and water environment ; Students' Session 1**

14.45 - 16.30

Hall 46 1st Floor

Chairmen: Mihaela BRÂNCUȘ, Iulian Horia HOLOBĂCĂ

14.45 - 15.00

Mihaela BRÂNCUȘ, Cristina BURADA, Liliana VELEA, Florin DRÎGĂ, Camelia BĂCIOIU: *Changes in Cold Indices 'Frost Days' and 'Frozen Soil Days' in the Recent Past (2011-2022) in Dolj County, Romania*

15.00 - 15.15

Mihnea-Ștefan COSTACHE: *The Relationship Between Climate and Hydrological Drought Indices at Different Time Scales in the Teleorman Catchment Using Different Climate Databases*

15.15 - 15.30

Cristina RIZEA, Daniel SABĂU, Silvia VOICU, Marinela TEODORESCU (DAN), Andrei COZMA, **Mirel Bogdan ION**, Gheorghe ȘERBAN: *A Comprehensive Analysis of Flooding Mechanisms Along Crasna River*

15.30 - 15.45

Bożena PIUS: *Evolution of the Structure of Flows in Small Lowland Catchments in the Cold Half-Year: Selected Examples from Poland*

15.45 - 16.00

Adina-Eliza Croitoru, Horváth Csaba, Magyari-Saska Zsolt, Sorin Pop: *A combined method for UHHs intensity and frequency assessment*

16.00 - 16.15

Horățiu PORUMB: *Dangerous Meteorological Phenomena for Flight Activities in the Warm Semester at Henri Coandă International Airport Bucharest*

16.15 - 16.30

Andrei DANILA, Robert STRECHE, Andrei STEREA, Oana ORZA, **Cristina DOBRE**, George SUCIU: *Urban Garden Management through the Use of IoT Monitoring Systems and Multi-Criteria Application*

16.30 - 17.00 Coffee break

**IV. Water Resource Management 2 ; Air and water environment monitoring ;
Weather and hydrological forecast**

17.00 – 17.45

Hall 43 1st Floor

Chairmen: Fatih ÜNEŞ, Csaba HORVATH

17.00 - 17.15

Bestami TAŞAR, **Fatih ÜNEŞ**, Mustafa DEMİRCİ, Hasan GÜZEL, Hakan VARÇİN:
Suspended Sediment Estimation Using Machine Learning Methods

17.15 - 17.30

Karlo MAŠKARIĆ, **Simona CÎNTĂ PÎNZARU**, Dănuţ-Alexandru DUMITRU, Csilla
MOLNAR, Teodora Diana DRÎGLĂ, Sanja TOMŠIĆ: *Raman Spectroscopy Techniques
and Technology as a Tool in Environmental Water Analysis*

17.30 - 17.45

Florin BÎLBÎE, Liliana ZAHARIA: *Flash Flood Forecasting Using Machine
Learning Models: a Scientometric Analysis*

17.45 - 18.00

Melinda VIGH, Csaba HORVATH: *Vertical Dynamics of the Upper Mureş Riverbed*

18.00 - 18.30 Conclusions (Hall 43, 1st floor)

V. Students' Session 2

17.00 – 17.45

Hall 46 1st Floor

Chairmen: Răzvan-Horațiu BĂȚINAȘ, Traian TUDOSE

17.00 - 17.15

Sergiu Daniel PAVEL, Traian TUDOSE, Iulian Horia HOLOBĂCĂ: *The Meteorological Features of Different Topoclimates in Sălaj County, Based on a Mainly Private Meteorological Network Stations*

17.15 - 17.30

Sara CRĂCIUN: *The Validation Study of Aerodrome Forecasts for Cluj-Napoca and Constanța Airports*

17.30 - 17.45

Ana ȚOLA: *Analysis of Hot Thermal Stress Conditions in Four Urban Areas in Romania*

14.45 – 18.00

Robert MUNUNAR, Csaba HORVATH: *Population Growth Impact on Climate Change*

18.00 - 18.30 Conclusions (Hall 43, 1st floor)

Partners



S.C. COMPANIA DE APĂ „SOMEȘ”
S.A., CLUJ



ADMINISTRAȚIA BAZINALĂ DE APĂ
„SOMEȘ-TISA”



HIDROELECTRICA
Puterea noastră este apa!

S.C. HIDROELECTRICA S.A. SUCURSALA
CLUJ