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**AIR AND WATER COMPONENTS OF THE ENVIRONMENT**

**INTERNATIONAL CONFERENCE**

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**AIR AND WATER COMPONENTS OF THE ENVIRONMENT  
INTERNATIONAL CONFERENCE  
DEDICATED TO  
WORLD METEOROLOGICAL DAY  
AND  
WORLD WATER DAY  
- March 20, 2021 -**

Each year, in order to celebrate the World Water Day (March 22) and the World Meteorology Day (March 23), we meet for three days at the Faculty of Geography of the prestigious Babeş-Bolyai University in Cluj-Napoca (<https://www.ubbcluj.ro/en/>), with Meteorology and Hydrology experts as well as to some in the connected science area, from Romania and from abroad, to take part in the International Conference “Air and Water – Components of the Environment”.

Participants are professors and researchers from different universities and research institutes, practitioners from the hydro-meteorological services and other stakeholders such as public authorities or representatives of public or state companies involved in those domains.

The main results are reflected in the ideas and experience exchange, cooperation between the Romanian and foreign experts in finding solutions for the assessment and management of climate and water risk situations. The conference also aims to promote and increase the visibility of the scientific results to society.

The research results, presented at the conference, are published as internationally indexed proceedings book, an effective tool for promoting specialized scientific contributions.

This year's XIII<sup>rd</sup> edition was one held in special, pandemics, conditions, reason why it was organized online using the Microsoft Teams platform, sufficiently verified and validated during the last three semesters at Babeș-Bolyai University.

The event was honored by the presence of the authorities of some institutions from Cluj-Napoca city: PhD. Prof. Daniel DAVID – Rector of Babeș-Bolyai University; PhD. Assoc. Prof. Titus MAN – Dean of the Faculty of Geography; PhD. Eng. Calin NEAMȚU – General Manager of "Someș" Water Company Cluj, as well as by personalities of the scientific world from Romania and abroad. We are grateful to all of them and thank them for their support.

Of the 10 traditional conference topics: Air and water environment monitoring; Climatic and hydrological hazards; Water resource management; Climatic changes and their impact; Pollution and protection of air and water environment; Weather and hydrological forecast; Potential of hydro – climatic resources; Air- and hydrobiology; Physics of atmosphere and hydrosphere; Students' Session, five were supported by a number of 25 presentations and 22 published articles and reviews (Climatic and hydrological hazards; Water resource management; Climatic changes and their impact; Weather and hydrological forecast; Students' Session), where are added the 4 large-scale presentations in the plenary session, so a total of 29 presentations. As students participated in smaller numbers with presentations (2), compared to other editions, the two contributions were associated with the existing thematic sections.

The analytics provided by the Microsoft Teams platform and the Conference Program show a number of 82 participants (users), where 35 owners + members and 47 guests. Also, among the participants with presentations, 9 of them were from abroad (Turkey, Holland, Bosnia-Herzegovina, Ukraine and Poland), the rest being from Romania, from different university centers or research & professional units (Cluj-Napoca, Bucharest, Iași, Târgoviște, Sibiu, Timișoara, Gheorgheni, Satu Mare, Bistrița).

Starting from the two mottos, launched this year by World Meteorological Organization and United Nations Water – *"The ocean, our climate and weather"* și *"Valuing water"* (Fig. 1), the working topics of the conference brought up the most relevant and delicate topics, related to the two covers of vital importance for humanity – Atmosphere and Hydrosphere.

([http://aerapa.conference.ubbcluj.ro/2021/Vol\\_2021\\_Content.html](http://aerapa.conference.ubbcluj.ro/2021/Vol_2021_Content.html)):



Fig. 1. The mottos and logos, launched this year by the World Meteorological Organization and United Nations Water dedicated to 2021 World Meteorology Day and 2021 World Water Day

**Climatic and Hydrological Hazards – I<sup>st</sup> topic**, brought up elements related to: Statistical Approach on Floods Features, Blizzard Episodes, Extreme Precipitations – Shortage and High Amounts, Flash Flood Assessment Using GIS and the Frequency Ratio Bivariate Statistical Models.

**Water Resource Management – II<sup>nd</sup> topic**, included presentations related to: Monthly Groundwater Level Modeling, Morphological Impact of the Hydrotechnical Systems on Riverbeds, Water Resources Management in limestone areas, Identification and Evaluation of Potential Floodplain Areas Using the Floodplain Evaluation Matrix and Numerical Simulation of Channel Flow Using Submerged Vane in River Arrangements.

**Climatic Changes and Their Impact – III<sup>rd</sup> topic**, contributed with applied studies related to: Monitoring the Vineyard Health in Smart Agriculture, Influence of Rainfall Characteristics on Runoff, Changes in Breeze Warmest Summers for the Romanian Black Sea Coast – the 2050 Time Horizon, Preferential Attachment in Modeling Climate Changes, Filling the Gap of Meteorological Data.

**Weather and Hydrological Forecast – IV<sup>th</sup> topic**, was that of predictions and modeling, respectively: Advance Hydraulic Modelling, Investigation of Precipitation Trend in Regional Scale, Favorable Avalanche Triggering Conditions and Risk, Analysis of Estimated Doppler Radar Rainfalls.

The atmosphere of the conference was very cordial and unique, although the participants were tens or thousands of kilometers apart. The lack of physical proximity, with which the participants were accustomed, as well as the lack of breaks between sections for physical socialization, or lack of pleasant thematic field trips, they left a gap impossible to cover.

The discussions and post-presentation analyzes proved to be important, the participants being particularly actively involved in their development. The presence of quite a large number of young students, PhD students and researchers (about a quarter of the audience) was also extremely gratifying. What they were seen and discussed represented a starting point and an impetus for their future career.

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