EXtremeClimTwin
BUILDING EXCELLENCE IN HYDRO CLIMATE RESEARCH

University of Novi Sad | Faculty of Sciences
DEPARTMENT OF GEOGRAPHY, TOURISM AND HOTEL MANAGEMENT

INTERNATIONAL CONFERENCE on HYDRO-CLIMATE EXTREMES and SOCIETY

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Novi Sad skyline during the heatwave July 2022 by Prof. Lazar Lazić

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POSTER PRESENTATIONS

Can Energy Communities be Tourism Destinations' Partners in Mitigating Greenhouse Gas Emissions? A Multiple Case Study Approach

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International tourism is responsible for a significant portion of human-induced greenhouse gas (GHG) emissions, with transport-related carbon emissions being the primary contributor. However, the combination of short- to medium-distance local travel, stays in luxury hotels, and energy-intensive activities of tourists can lead to large GHG emissions at the destination, which may partially or fully offset the GHG emissions from transport to that destination. Many destinations are exploring ways to reduce their GHG emissions by implementing innovative energy management solutions. One such solution is the idea of energy communities Energy communities are citizen-driven initiatives that promote the transition to clean energy, while also empowering residents. They can help to build public support for renewable energy projects and attract investment to the clean energy transition. Despite their potential, energy communities have not been widely considered in tourism destination energy management. This paper analyzes case studies from three different destinations in Europe (a seaside setting, a mountain town, and an urban area) to gain insights that could apply to similar destinations. Thus, this paper promotes energy communities and their potential to be valuable partners for tourism destinations in their efforts to reduce GHG emissions and promote sustainable practices.

Urban flood protection and stormwater removal: The development of the multifunctional porous pavement prototype

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Increasing occurrence of pluvial flooding in urban areas due to heavy rainfall is associated with the traditional urban drainage practice (focused primarily on conveyance and partial detention of stormwater) and with the climate change impact. Urban flood resilience of modern cities is under constant pressure of grow-

ing urbanization and climate change uncertainties. Urbanization is usually coupled with a rapid growth of nonporous surface area leading to the reduction of rainfall infiltration and the increase in stormwater runoff. In order to mitigate urban flooding effects, permeable/pervious paving as a sustainable urban drainage technique is developed and applied. To recover pre-urbanization hydrology and manage urban stormwater in a distributed manner at the source, permeable/pervious paving is used as low impact development strategy reducing the runoff volumes/rates. This research is focused on two environmental-friendly concepts: (1) application of industrial waste, as a resource (currently representing a burden to the environment and local/global economies), and (2) urban surface modification for improvement of hydrological performance preventing disastrous urban floods and recharging groundwater resources. In this study the use of waste materials (both hazardous and non-hazardous) in porous paving is based on contemporary structural science, sustainability, circular economy and environmental protection principles. Expected impacts of the study are as follows: reduction of pluvial flood risks, reduced health hazards and benefits for public health, improved traffic safety, reduced environmental pollution and benefits for local economy.

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Geographic and Mathematical StationLocations in Official Surface Water Hydrological Stations Network at Sava River in Serbia – Future Issues

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Extreme hydrological phenomena are events that are expected to become more frequent in the future. Extremes are expected both in terms of hydrological characteristics and water quality. Official surface water hydrological stations network is of great importance for their prediction and monitoring. As on other rivers in the Pannonian basin, extreme hydrologic events are expected in the Sava river as well. The current network of stations includes stations in 5 locations, Jamena, Sremska Mitrovica, Šabac, Beljin and Belgrade and 2 stations for water quality, Jamena and Šabac. Jamena is located at 204.8 km and Sremska Mitrovica at 135 km of the Sava river. At 177 km of the course is the mouth of the Drina River, which is the largest tributary of the Sava River with a length of 346 km, and at 170 km is the mouth of the Bosut River, which is 186 km long. In order to better monitor the influence of these rivers on the hydrological characteristics of the Sava, it would be necessary to set up a surface water hydrological station in the Sava river, downstream of these estuaries. This would enable the monitoring of hydrological extremes on the Sava towards Sremska Mitrovica and downstream. In order to monitor the impact of settlements on water quality, in the future it will be necessary to install stations downstream of the existing ones in the current network. This will enable the monitoring of the impact of cities on the quality of the Sava river. These activities on the installation of new stations in the future would improve the prediction, monitoring and response to extreme hydrological phenomena in the Sava River.