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Nino Kravica et al.

Flood hazard prediction is a critical component of flood risk assessment, flood risk management plans, and implementation of flood mitigation measures. In the EU, there is currently a growing interest in floods caused by extreme heavy rainfall, commonly known as pluvial floods. Due to the rapid development of computational and remote sensing technology, as well as the public availability of high-resolution spatial data, pluvial floods are now simulated using integrated hydrological-hydraulic approaches consisting of time-dependent 2D numerical models and so-called rain-on-grid approaches with spatially variable infiltration. In this paper, we will present the recent progress and methodological framework for pluvial flood hazard assessment in the city of Poreč in the northern coastal part of Croatia, focusing on the interpretation and modification of spatial input data, precipitation data processing, and numerical modelling of pluvial flooding. We show what spatial data were collected and improved, what spatial data were generated, how the precipitation data were processed for this purpose, and discuss some modelling aspects specific to pluvial flooding in urban areas. Finally, we present the results of the pluvial flood hazard assessment for the city of Poreč and its catchment area and provide some recommendations for further research.

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