



Towards the elaboration of the multimodel hydrologic ensemble prediction system with the dedicated river monitoring infrastructure: HydroProg as a product for flood management teams

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There exist several hydrologic ensemble prediction systems (HEPSs) at national and international levels. Generally, they reveal good prediction skills. They are often based on data collected by country-owned hydrologic and weather gauges, the spatial distribution of which is not uniform. In particular, spatial coverage of these gauges is often sparse in small mountainous catchments where dynamics of riverflow is high, and where high flows develop rapidly. Thus, even well-designed HEPS may fail to work properly if the national gauging network does not exist or is sparse in the upper reaches of mountainous streams. To overcome this problem, we propose a comprehensive solution which consists of (1) original, self-designed and cheap hydrometeorological gauging station to measure water level and rainfall intensity in real time, (2) and the HydroProg software to preprocess the collected data, run a few hydrologic models and produce the multimodel ensemble predictions. The gauging station is designed for HydroProg itself, therefore system deployment is straightforward and there is no need to undertake activities to adjust the software to data standards. Since the costs of the gauging station is kept low, the entire solution is affordable and can be acquired by local governments to provide the real-time flood prediction in yet ungauged mountainous basins where country-owned observational network does not exist. Hence, the complete system (HydroProg with dedicated gauges) may be interesting for flood managers who want to complement the reliable hydrologic forecasts issued by national and international institutions. In the poster, we report on the first, simplistic implementation of the complete system. The research is supported by the National Centre for Research and Development as well as the National Science Centre, Poland, through the project no. TANGO1/267857/NCBR/2015.