

EGU2020-2405

<https://doi.org/10.5194/egusphere-egu2020-2405>

EGU General Assembly 2020

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## A first look at ERA5 for physically based water balance modelling of the Devoll Catchment, Albania

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The need for effective water resources management has turned into a major challenge, especially in the face of climate change. Meteorological data is not always readily available and thus the task of predicting the response of hydrological systems becomes complicated. For this reason, climate reanalysis datasets are used as a viable alternative. They combine models with data from satellites and ground sensors and provide consistent long-term meteorological conditions with high temporal resolution. The ERA5 reanalysis dataset was produced and is continuously updated by the European Centre for Medium-Range Weather Forecasts (ECMWF). Within this framework, the ERA5 reanalysis dataset has been applied to predict the hydrological response of the Devoll River catchment in Albania. Due to its location, Albania belongs to the Mediterranean climatic belt, which is characterized by hot dry summers and mild rainy winters. The Devoll River catchment is situated south from the capital city Tirana and covers a surface of around 3140 km<sup>2</sup>. The flow regime of this catchment consists mainly of snowmelt in the upstream mountainous part, whereas precipitation dominates the lower regions. The simulation of the different flow components was carried out with the latest version of the Water Balance and Simulation Model (WaSiM) on a daily time step. The performance of the simulation was evaluated with the Nash-Sutcliffe (NSE) and the Kling-Gupta (KGE) efficiencies, yielding values of 0.66 and 0.80, respectively. Although the model performance suggests some deficiencies, it is considered satisfactory given that ERA5 is a reanalysis dataset with modelled precipitation fields. From the resulting hydrographs, it is possible to infer that observed and simulated runoff follow the same dynamics and a close correspondence between flow peaks can be achieved. These results finally reinforce the idea of applying ERA5 datasets in cases where meteorological input data availability is low or even absent.