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Scatterometer soil moisture data for the conceptual rainfall-runoff model

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The different approaches for the improvement of the calibration processes of the conceptual hydrological models are annually introduced. In our paper, we focus on the improvement of runoff and soil moisture simulation, by the assimilation of the scatterometer soil moisture to the calibration process of the HBV type rainfall-runoff model. The model was single-calibrated for runoff and multi-calibrated for the combination of the runoff and the combination of the soil moisture data for the root and surface soil zone. We validated the model in the two-period and compare the simulation results between the single and multi-objective approaches. The improvement of the soil moisture simulation was detected in almost 80% of the catchments, in the case of the runoff simulation we detect the improvement in almost 30% of the catchments, mainly in the catchments with a lower mean elevation, narrower terrain, and higher agricultural land percentage.