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Soil moisture forecasting via two different hydrological models

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A monthly water balance (MWB) model and the coupling of snow accumulation-ablation (SAA) and soil moisture accounting (SMA) models of the US National Weather Service (US NWS) were examined and compared with respect to soil moisture forecasting over a medium-sized mountainous catchment (the Mesochora catchment in Central Greece). The analysis was focused on the model time resolution, structure, input data, and calibration process. Better results were obtained from the US NWS models, which operated on smaller time increments (six-hour step for the SAA model and daily step for the SMA model), were explicitly parameterized, and for which the input data and parameter estimate procedures were more accurate. The main model evaluation criteria were the efficiency measure of *Nash and Sutcliffe* and the comparison of the measured and predicted streamflow by the average month. The monthly and seasonal soil moisture predictions by the models (SAA-SMA, MWB) were enough different in values and profile.