



Calibration of distributed snow dynamic model from satellite images in area with complex topography

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This work presents a simplified numerical model of snow dynamic implemented into a continuous distributed hydrological model for hydrograph simulations at basin scale. This snow model is based on air temperature thresholds that rule the snow melt and accumulation processes.

A procedure to calibrate these temperature thresholds from NOAA satellite snow cover maps is discussed. We show that, for an accurate model calibration from satellite images, it is necessary to consider the presence of areas with complex topography such as mountain slopes.

Snow model performance is tested both at local and basin scale on Alpine catchment. At local scale a good agreement between modelled snow dynamic and observed snow height data at snow gauge stations in the river Anza basin (Italy) is shown; at basin scale agreement between observed and simulated hydrographs at the river Toce outlet (Italy) is reported.