



Snow Water Equivalent Estimation via Assimilation of Modis Snow Cover and Real Time Snow Depth Measurements Data in a Snow Dynamic Model

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Estimates of snow water equivalent (SWE) is very difficult due to its high variability also over small distances. This variability makes it often impossible to obtain a sufficiently accurate estimate of the water volume available in the snowpack at the watershed scale. All sources of information to evaluate SWE distribution are then to be considered: point measurements, satellite data and snow modelling, each one affected by intrinsic uncertainty. The methodology outlined in this work consists of combining several sources of information to provide the best estimate of the snowpack state as possible. We use satellite snow cover area (SCA) from MODIS and real time point measurements to drive a simple spatially distributed snow hydrological model in a data assimilation framework.