



Inexpensive temperature sensors to monitor snow height and snow thermal properties

Dominik Reusser (1), Markus Weiler (2), and Erwin Zehe (3)

(1) University of Potsdam, Institute for Geoecology, Golm, Germany (dreusser@uni-potsdam.de), (2) University of Freiburg, Institute of Hydrology, (3) TU München, Institute of Water and Environment

Small, self-recording temperature sensors installed at several heights at one location can be used to estimate the temporal evolution of snow cover thickness. An algorithm was developed to assess snow height based on the insulating layer of snow. In addition effective thermal conductivity and cold content of the snow cover was calculated. Results can be calculated without any additional information such as climate data or assumptions for a snow model. Results are presented for the Weißeritz catchment at the Czech-German border and the Russel Creek catchment on Vancouver Island, BC and compared to data from snow surveys and ultrasonic snow height measurements.