

Numerical modelling of snowpack seasonal evolution in various climatic conditions

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Abstract Results obtained by simulating snow characteristics with a numerical model of land surface heat and moisture exchange, SPONSOR, are presented. The numerical experiments are carried out for Franz Josef Land with strong winds and low temperatures, Dukant in the Tien Shan mountains with abundant relatively warm snow, and Valdai in western Russia with large interannual variability. The blizzard evaporation parameter is shown to have a great influence on snow depth at territories with high wind speed. At locations with regular warm events during winter, one should pay special attention to their modelling in terms of snow water equivalent and depth.

Key words snow modelling; blizzard evaporation; snow melt; interannual variability