



## **Snow depth and snowmelt variability derived from passive microwave remote sensing observations and the Ob river water discharge.**

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Snow plays an important role in the water cycle of the Arctic regions. The winter snow mass storage and its subsequent melt is one of the major factors that influences the river discharge at northern latitudes. In this paper we analyse the interannual variations of snow depth and snow melt dates over the Ob river basin and we compare them to discharge measurements at the Ob estuary. The snow parameters are derived from passive microwave remote sensing measurements by SSM/I during the period 1989-2001. Significant correlation is obtained between the interannual variations of snowmelt dates and runoff in May and between the interannual variations of winter snow depth and runoff in June. These results allow a validation of the methods used to retrieve the snow characteristics from the satellite measurements. Furthermore, they provide data to improve the description of the snow-runoff relationship in global hydrological models. This is extremely important to monitor and predict snow related high flood events that have a very strong impact on the social-economical life of the region.