



Seasonal snowmelt patterns for Russia from QuikScat diurnal difference analyses

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Seasonal snowmelt plays an important role for hydrology in northern latitudes. Its spatial and temporal dynamics are determined by atmospheric processes. The spatial and temporal patterns can be identified by satellite sensors especially microwave instruments. Seawinds/Quikscat Ku-band scatterometer provides several acquisitions per day at high latitudes. This allows the investigation of diurnal changes. Significant differences between morning and evening backscatter are characteristic for the spring snowmelt period.

The complete time series covering the spring seasons 2000 - 2007 has been investigated for entire Russia. The following parameters have been extracted: onset of final snow melt, duration and end of the snowmelt period. This is based on cluster analyses of days with diurnal thaw and refreezes (Bartsch et al.). Beside spatial patterns, the relationship between length of snowmelt period and diurnal freeze/thaw are investigated for the Tundra and Taiga regions above 55°N.

Bartsch, A., R. A. Kidd, W. Wagner, Z. Bartalis (2007): Temporal and spatial variability of the beginning and end of daily spring freeze/thaw cycles derived from scatterometer data, *Remote Sensing of Environment*, Volume 106, Issue 3, February 2007, Pages 360-374.