



Decadal change in snow line elevation in the upper Vah basin (Slovakia).

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The main idea of the study is to evaluate the spatial and temporal variability of snow line elevation in a mountain basin. The analysis is performed in the Upper Vah basin situated in northern part of Slovakia. The area of the basin is 1216 km² and elevation ranges between 564 and 2494 m a.s.l. Snow cover variability is estimated from daily MODIS (Terra and Aqua) products and from snow course measurements carried out in a small experimental sub-basin (Jalovecky creek) and meteorological stations located in the study area, in the period 2001 – 2013. The snow line elevation is estimated by comparing the elevation of pixels classified as snow and land. The results will demonstrate the sensitivity of snow line elevation to different thresholds used in the analyses, i.e. threshold for cloud coverage or different quantiles used for describing the elevation of snow and land pixels. A seasonal variation of the snow line elevation will be discussed and compared with respect to snow rich/poor winter seasons. Finally, a methodology for cloud removal in MODIS products based on snow line elevation will be outlined and demonstrated for three contrasting winter seasons.