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Snow line elevation changes in Europe

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This study asses changes in snowline elevation during snowmelt runoff floods in selected basins from Austria, France, Norway, Slovakia, Slovenia, Sweden, Switzerland and Turkey. The main research question is to investigate the spatial and temporal differences in regional snowline elevation (RSLE) and to discuss the factors which control its change in Europe.
The RSLE is estimated from daily MODIS snow cover data (MOD10A1) by using the methodology of Krajčí et al., (2014). The changes in RSLE are analysed for selected flood events in the period 2000-2015. The snowmelt runoff events are extracted from Catalogue of identified flood peaks from GRDC dataset (FLOOD TYPE experiment) available at http://www.water-switch-on.eu/sip-webclient/byod/#/resource/12056.
The results will be discussed in terms of: (a) availability and potential of MODIS snow cover data for identifying RSLE changes during snowmelt runoff events, (b) spatial and temporal patterns of RSLE changes across Europe and (c) factor controlling the RSLE change.
The analysis is performed as an experiment in Virtual Water Science Laboratory of SWITCH-ON Project (http://www.water-switch-on.eu/). All data, tools and results of the analysis will be open and accessible through the Spatial Information Platform of the Project (http://www.water-switch-on.eu/sip-webclient/byod/). We believe that such strategy will allow to improve and forward comparative research and cooperation between different partners in hydrology (Ceola et al., 2015).

References

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