

Generation of a high-resolution snow cover dataset from Sentinel-2 images for snow model calibration

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Snow cover observation



In total, **366 snow cover maps** for the period June 2015 to October 2020 covering the **high elevation Alpine research area** upper Martell valley (South Tyrol/Italy) were generated.

Snow cover simulation

Physically based and fully distributed hydrological model **WaSiM**. Daily snow cover maps with 25mx25m grid resolution.



Snow classification with the Normalized Difference Snow Index (NDSI) based on green and SWIR bands.

Cloud detection with the pixel classification algorithms **Idpex** from SNAP v.7.0.

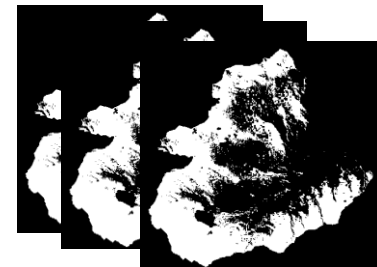
SNAP - ESA Sentinel Application Platform v7.0.

Two step validation of snow classification

1 In-situ snow depth observation

2 **eurac** research

Cloud and snow classification with a **Support Vector Machine (SVM)** trained with active learning (AL).



<http://www.wasim.ch/en/index.html>

First results show an overall good prediction accuracy (>0.9) with the hydrological model.