



Swiss Federal Institute for Forest,
Snow and Landscape Research WSL



WSL Institute for Snow
and Avalanche Research SLF

Master thesis in forest snow hydrology at SLF in winter 2018/19

Background

Seasonal snow is an important component of the hydrological cycle in many regions of the world. The presence of snow substantially affects energy and moisture fluxes at the land surface. Snow cover processes are therefore a critical element of land surface schemes built into ecohydrological and climate models. Forested areas are particularly challenging for model developers. The processes affecting snow cover dynamics in forests are complex, difficult to observe, vary at very small scales, and are strongly controlled by the spatial structure of the canopy and the micrometeorological conditions below the canopy. Aiming at improving our abilities to predict snow water resources in forested areas, we investigate forest snow processes at several experimental sites in Davos to inform improvements of land surface models.

For more information see

<https://www.slf.ch/en/snow/snow-as-a-water-resource/snow-in-the-forest.html>

MSc Project

We are looking for a motivated Master student to contribute to our forest snow hydrological research during the winter field season 2018/19, ideally starting November 2018. The MSc project will involve experimental fieldwork as well as numerical modeling.

The work will include:

- Micrometeorological and snow measurements at various forested and open sites
- Analysis of data collected at our field sites
- Testing and improving existing parametrizations of forest snow processes
- Sensitivity tests using alternative process representations in land surface models

Interested students will work collaboratively with our PhD students. They should have a background in hydrology, meteorology, environmental sciences or similar. As the project includes extensive fieldwork, students are expected to be based at SLF in Davos during the duration of the entire MSc project (min. six months). Other MSc topics are available on request.

Contact information

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