

## **Development of the Finse Alpine Research Station towards a platform for multi-disciplinary research on Land-Atmosphere Interaction in Cold Environments (LATICE)**

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The Finse Alpine Research Station provides convenient access to the Hardangervidda mountain plateau in Southern Norway (60 deg N, 1222 m asl). The station is located above the tree-line in vicinity to the west-eastern mountain water divide and is easily accessible by train from Bergen and Oslo. The station itself offers housing and basic laboratory facilities and has been used for ecological monitoring. Over the past years, studies on small-scale snow distribution and ground temperature have been performed and accompanied by a suite of meteorological measurements. Supported by strategic investments by the University of Oslo and ongoing research projects, these activities are currently expanded and the site is developed towards a mountain field laboratory for studies on Land-Atmosphere Interaction in Cold Environments, facilitated by the LATICE project ([www.mn.uio.no/lattice](http://www.mn.uio.no/lattice)). Additional synergy comes from close collaborations with a range of institutions that perform operational monitoring close to Finse, including long-term time series of meteorological data and global radiation. Through our activities, this infrastructure has been complemented by a permanent tower for continuous Eddy-Covariance measurements along with associated gas fluxes. A second, mobile covariance system is in preparation and will become operational in 2017. In addition, a wireless sensor network is set up to grasp the spatial distributions of basic meteorological variables, snow depth and glacier mass balance on the nearby Hardangerjøkulen ice cap. While the research focus so far was on small scale processes (snow redistribution), this is now being expanded to cover hydrological processes on the catchment and regional scale. To this end, two discharge stations have been installed to gauge discharge from two contrasting catchments (glacier dominated and non-glacierized). In this presentation, we provide an overview over existing and planned infrastructure, field campaigns and research activities, accompanied by available data, the result of some preliminary analysis and discuss opportunities for future collaboration.