A Distributed and Real-Time Wireless Network of Weather Stations for Wind Blown Snow at Finse, Norway.

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While it is common nowadays to obtain spatial coverage of the maximum snow depth distribution using remote sensing technology, obtaining distributed weather observations for either forcing or validating models remains a challenge. At the alpine site Finse, half way between Oslo and Bergen, our group is experimenting with low-cost, wireless, and open-source technology allowing the construction of a distributed network pushing near real-time weather data to the Internet. The network, once operational, will be used as the backbone for additional low-cost and remote data-loggers maintaining synchronization to the main data server. This type of network will provide a high density dataset, capturing spatial variabilities across the watershed. Coupled to regular spatial characterization of the snow cover (snow depth, snow stratigraphy) using remote sensing and on site measurements, we hope to gain new insights into the annual formation of an alpine wind-blown snowpack, as well as creating a robust dataset for modeling application.