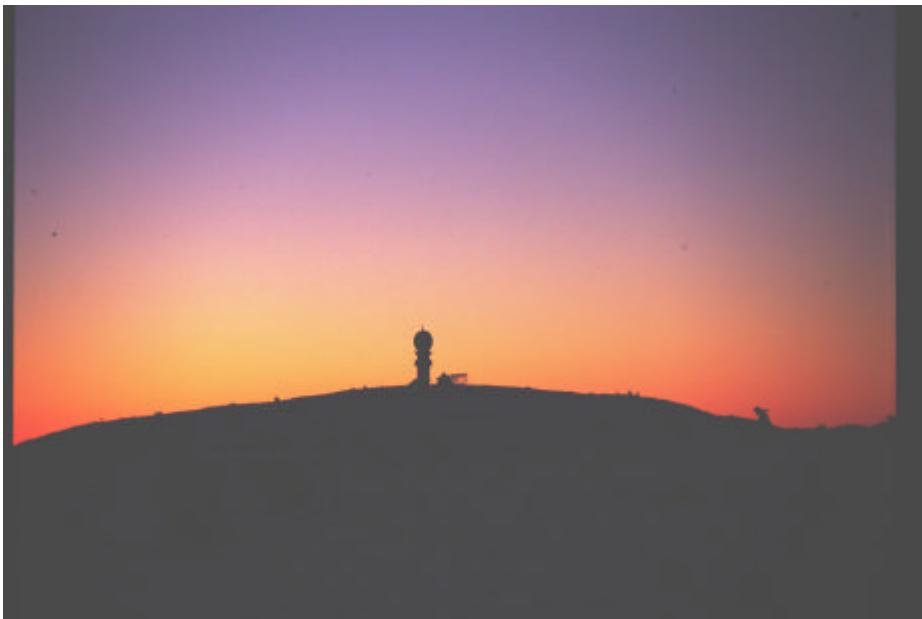
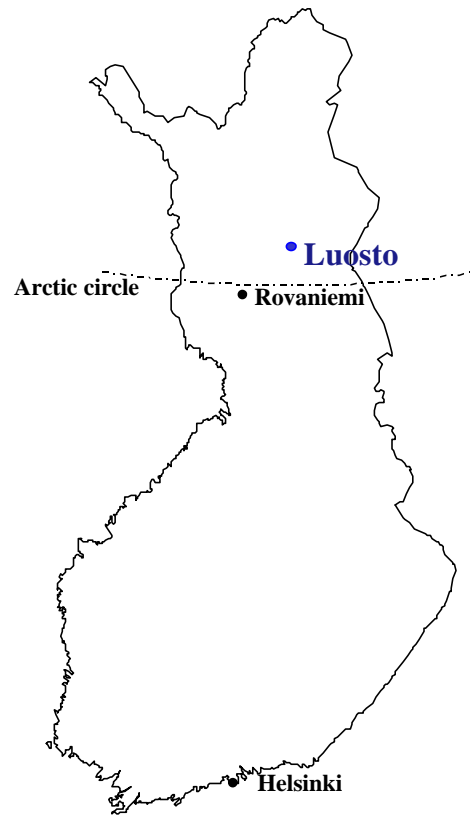


EUMETNET SWS II site at Luosto fell in Finland

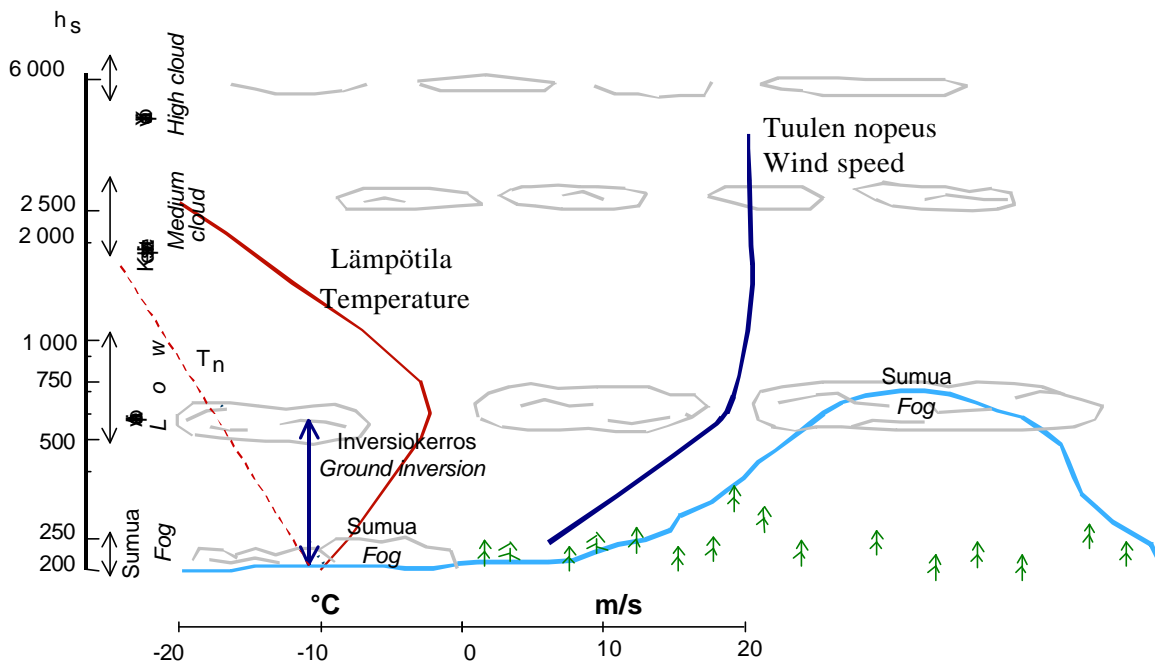
Location: 67°08' N, 26°54' E, 515 m a.s.l



The test site with the weather radar and the measurement platform seen from east.

Objectives of testing at Luosto

Luosto fell is located very close to Pyhätunturi fell (500 m a.s.l) where the FMI has performed wind energy related measurements for several years. The treeless fell caps are typically just above the frequent surface inversion layer and thus open for hard winds and severe icing conditions.



A Schematic description of ground inversion upon an arctic fell.

The EUMETNET SWS test station is erected on the side of the FMI new radar station. Luosto test site provides good possibility to study the icing effect on different types of meteorological sensors, and also icing.

The main disadvantage is that the station is not manned. However the FMI Sodankylä observatory is only about 30 km away, so frequent inspections are possible. For the first winter the control is based mainly on video monitoring and intensive periods (á 1 week) with manual observations and measurements.

Infrastructure

The test site is located at the southern end of the Luosto fell. The slopes of the fell are quite gentle. The skiing resort with the ski lifts is about 1 km north the radar station.

The platform for the instruments was built this autumn on the western side of the weather radar. For siting the typical wind distribution during the wind measured at the nearby Pyhätunturi fell was taken into account. Thus the sensors are open for most frequent icing wind directions.



Also Santa Claus has visited and accepted the site and the arrangements.



A typical foggy and icing day at noon on 27.11.2000

The floor of the platform is 2,5 m above the ground. The piles for the wind sensors are 3 m high, while the other sensors are put on shorter piles on the other side of the platform. For checking and closer examination of the sensors each pile can be taken down, or additional stairs have to be used to reach . Because the site is also open for tourists the entrance up to the platform is closed. A detailed description of the measurements during the winter 2000/2001 is given in the following figure.

Data acquisition system

Sensors are connected to the MILOS 500 station, where 10 minute averages, standard deviation, 1s minimum and maximum are recorded. For higher frequency data sampling a PC system is used.

Time schedule

The platform was erected in 20.11.2000. The installation of the data logging system was slightly delayed so that first set of instrumentation was installed in 22.11.00 and second set 18.12.2000. The video recordings and manual icing gauge will be installed during the week 2 in 2001.

Severe Weather Sensor Luostotunturi

