

The Sveg (SE) icing measurement station

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Results from icing measurements carried out in Sveg (SE) will be presented along with proposed updates of the measurement system, its functionality and user interface.

Icing of wind turbine blades poses a significant challenge in cold climate regions around the world, as it increases the economic risk thereby reducing the profitability of wind energy projects in affected areas.

A wind turbine located on a hilltop in the Municipality of Härjedalen was put into regular operation in Dec 2007. This turbine is located close to a 323 m tall telecommunication mast in which icing measurements have been carried out at 4 different heights from 15 to 240 m, as well as on the nacelle of the wind turbine.

At the other 5 COST 727 measurement stations, data are acquired in one position a few meters above the ground. Although the latter suffices for comparing sensors and verifying weather models, the icing conditions close to the ground are not particularly relevant for the operation of wind turbines.

So far, one Catch-22 issue for wind energy in icing climates has been the difficulty to obtain R&D funding for the development of anti-/de-icing systems. Such funding requires a presently unavailable market study, which requires verification of performance in icing conditions as well as mapping of icing. The latter requires verified icing models, which in turn requires verified empirical models of physics of icing.

The chain of events described above has still to unfold.