

Nanoscale impulse radar measures depth of snow and ice

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Credit: AI-generated image ([disclaimer](#))

Snow is the be-all and end-all for alpine ski resorts. Now a tiny sensor has been developed to determine how much cold gold there is on the slopes and how much more should be produced. The sensor is based on Norwegian radar technology and is no larger than a match head.

The sensor can be used in preparing trails as well as slopes at Nordic and Alpine skiing facilities. It can also be used to measure the thickness of ice to determine whether it is safe for cars, for instance.

The [processor chip](#) from Novelda is the result of high-level nanotechnology. The minuscule Norwegian-designed [silicon chip](#) has already become an international success. Customers around the world are creating applications based on the technology.

Snow measurements available via Google Earth

The US-based company Flat Earth has drawn on Novelda's technology to develop the SDS-715 snow-depth sensor. It is capable of measuring snow depth from 15 cm to 2 m with a margin of error of 3.5 cm.

The sensor is mounted beneath the vehicle that prepares the tracks. Snow depth is measured at one-second intervals. A separate application can be used to display snow depths via Google Earth.

A corresponding system has been approved for use in Russia to measure whether or not ice is thick enough for cars to drive on.

May replace pulse sensors

There are widespread applications for the nanoscale sensor. Eirik Næss-Ulseth, Chairman of the Board in Novelda, envisions integrating the chips into athletic garments to replace pulse sensors that are currently held in place with an elastic band.

"We have already proven that the chips can be used to measure pulse and breathing rates at a distance," he explains.

Provided by The Research Council of Norway

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