

Wireless Snowpack Monitoring System

Inventor: Jeff Frolik, Christian Skalka
The University of Vermont, Office of Technology Commercialization



Overview

Snowpack studies are essential for water planning and provide critical data for fields such as agriculture, recreation, and city planning. Until now, the predominant ground-based techniques used for these studies have been manual measurement of snow cores and deployment of large, potentially hazardous antifreeze-filled bladders.

The high cost and snowpack damage associated with both techniques have limited their deployment, especially in complex, challenging, or widespread terrain. This limited deployment can reduce the accuracy of runoff forecasts, as variations in wind, terrain, vegetation, and other localized factors exert strong influences on snow distribution.

Invention

The invention is a network of embedded wireless sensing devices and a set of algorithms that allow more accurate assessment of snow water equivalency (SWE) across an area in comparison to existing methods. The lower unit cost and compact design allows systems to be deployed in remote locations. Wireless networking allows data collected to be collected in realtime.

Advantages

- Higher temporal and spatial resolution
- Lower deployment costs
- On-site data collection

I.P. Status

US Patent Issued:

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