Hydroinnova

SnowFox™: *snow-water equivalent depth made easy*

SnowFox is a portable, affordable and highly adaptable sensor capable of measuring the water equivalent depth of snow (SWE) over a small area.

How it works

The sensor is placed on or just beneath the ground where it is allowed to be buried by falling snow. The sensor records the intensity of downward-directed secondary cosmic-rays that penetrate the snow pack. This intensity is proportional to the mass of snow traversed by cosmic-rays, and is related to SWE through a calibration function. Measurements are typically averaged over one hour.
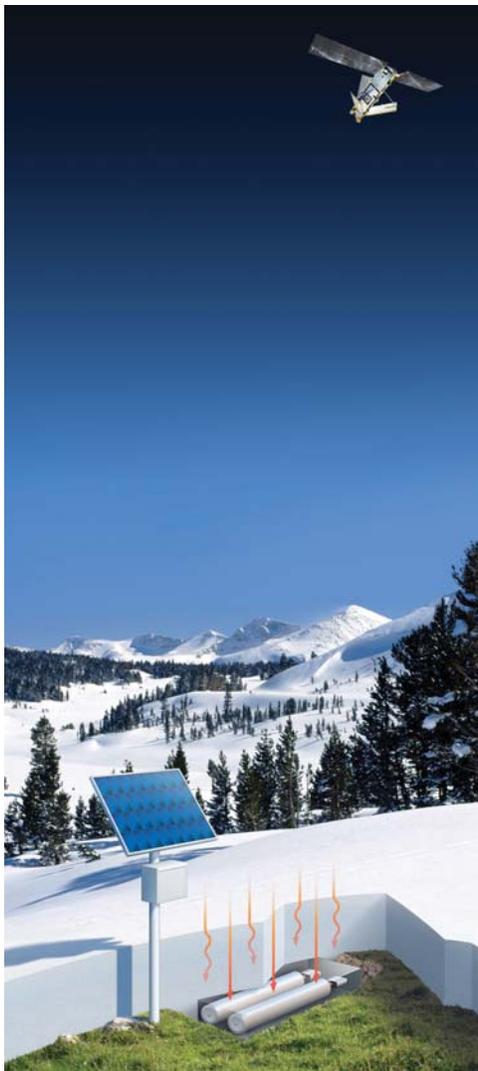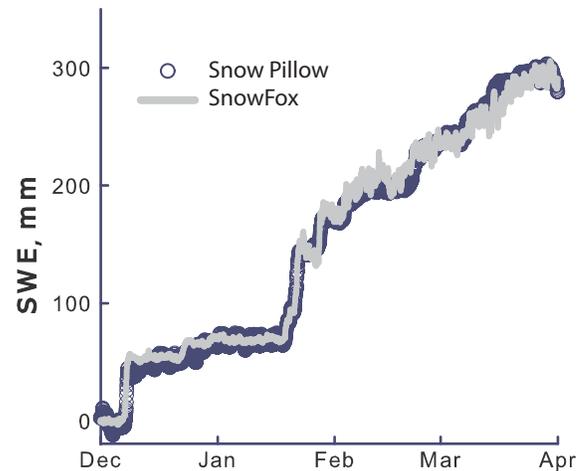
Advantages

Portable. As light as 10 kg, the *SnowFox* can be carried by one person.

Easy to install. The *SnowFox* sensor can be carried to site and simply placed on the ground surface. The complete system can be installed in under one hour. Our method eliminates the need for direct vehicular access, leveling ground, pumping large volumes of antifreeze and tedious installation of sub-surface plumbing and pressure transducer.

Challenging terrain? No problem. *SnowFox* can be installed on steep slopes, dense forest and uneven ground. (Try doing that with a snow pillow!)

Low environmental impact. A snow pillow requires large volume of antifreeze, and usually requires some digging and landscaping. With *SnowFox* you can reduce your impact and regulatory headaches.

Lowest total cost of any SWE sensor. Considering sensor + installation costs, *SnowFox* is currently the most economical choice on the market.

Advantages over gamma methods. *SnowFox* is inherently more robust than methods based on gamma spectroscopy, which require fragile glass-containing components and hydgroscopic materials. Long term drift is less of a problem. *SnowFox* is also less data and algorithm intensive. **But most importantly, unlike the gamma method there is virtually no limit to the amount of SWE you can measure.**

Compatibility. Use *SnowFox* with third-party data loggers, our off-the-shelf logging and telemetry products, or let us design and manufacture a custom data acquistion system for your network!