

Snow Depth Variability in the Northern Hemisphere Mountains Observed From Space



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What is the Science Question?

With observations still lacking at the global scale, how can snow depth in mountains be estimated?

What are the findings?

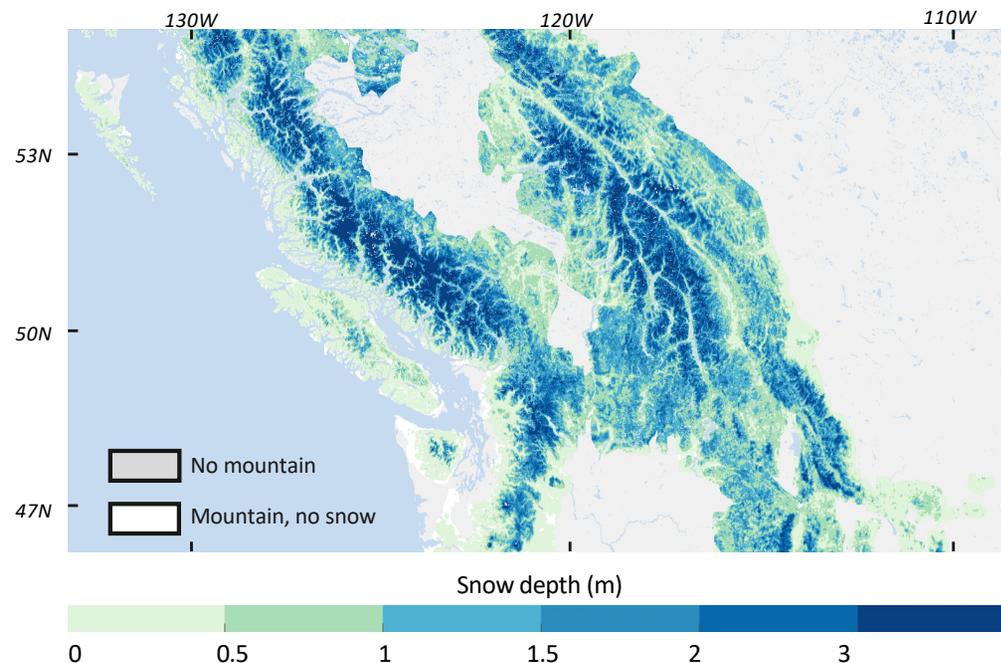
NASA researchers have contributed to the development of a novel method to estimate snow depth in mountains using radar observations from ESA's Sentinel-1 satellites.

What was the impact?

With the 1-km resolution and regular, wide-area coverage of the snow depth estimates, plus ESA's plans for continuing such observations into the 2030s, the new method could be a major component of a global snow depth and snow water equivalent observing system — especially if combined with other techniques.

Why does it matter?

Accurate snow depth observations are critical to assess water resources. More than a billion people rely on water from snow, most of which originates in the Northern Hemisphere mountain ranges. These findings lay a foundation for quantifying the long-term vulnerability of mountain snow-water resources to climate change.



Feb. 2018 snow depth estimated from Sentinel-1 radar for part of the western U.S. and Canada.