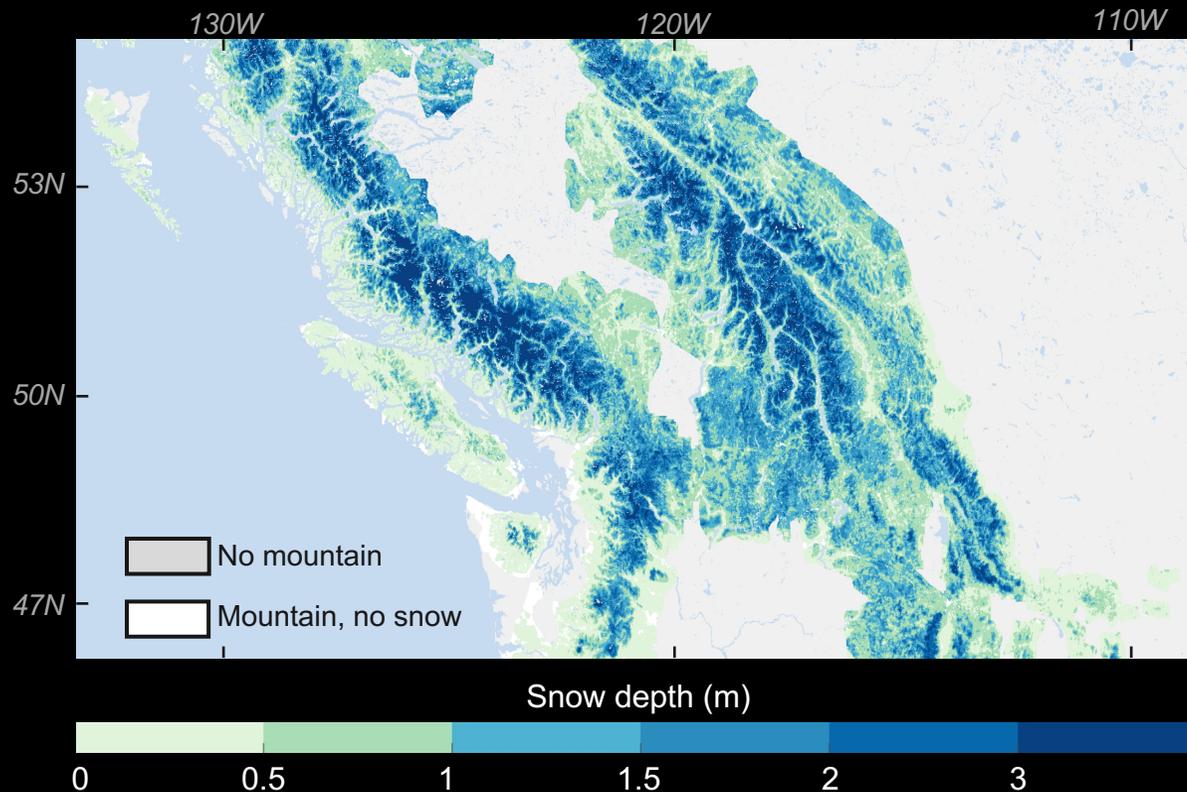# Snow Depth Variability in the Northern Hemisphere Mountains Observed From Space

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

Accurate observations of mountain snow depth are still lacking at the global scale. NASA researchers contributed to the development of a novel method to estimate snow depth in mountains using C-band (5.4 GHz) radar observations from ESA's Sentinel-1 satellites.

An evaluation with measurements from ~4,000 sites and NASA reanalysis data demonstrates that the Sentinel-1 retrievals capture the spatial variability between and within mountain ranges, as well as their interannual differences.

With the 1-km resolution and regular, wide-area coverage of the snow depth estimates, plus ESA's plans for continuing Sentinel-1 into the 2030s, this could be a major component of a global snow depth observing system.