



## **Snow stratigraphy on the Greenland Ice Sheet**

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The Greenland ice sheet (GrIS) is known to have the potential to contribute to sea-level rise in a warming climate. The snow cover on the ice sheet, which is the direct link between a potentially warmer atmosphere and the ice itself, is, however, poorly investigated and little is known about the microstructure and especially about the spatial variability of the snow cover.

We present snow measurements conducted during an extensive flight campaign in May 2015, which covered a broad geographic range of the GrIS to choose profile locations from areas with different climatic conditions and accumulation regimes. The snowpack was characterized using traditional and modern high-resolution measurements (e.g. micro-computed tomography, high-resolution penetrometry, laser reflectance) which provide a quantitative, detailed picture of the stratigraphy and microstructure of the snowpack on the GrIS. Several transects on the scale of 20 - 50 meter reveal the small scale spatial variability also. We discuss the stratigraphic details of and the differences between the different profile sites as well as the advantages and limitations of the modern measurement methods under such environmental conditions.