



## **Ranking spatially and temporally variable Greenland ice surface melt factors**

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Greenland ice sheet surface melt water production is evaluated via a spatially distributed surface energy budget analysis of the 14 summers spanning 2000-2013. Key ingredients are DMI HIRHAM5 5km x 5km output and NASA MOD10A1 daily albedo. The HIRHAM5 simulated downward solar and infrared fluxes and turbulent fluxes are compared with in-situ data from the Danish PROMICE.org automatic weather stations. The seasonally and spatially evolving relative importance of individual surface energy budget components yields detailed insight into physical processes driving melt variability with some surprising implications to ice sheet surface mass balance sensitivity to climate change.