

Interactive comment on “Dust from the dark region in the western ablation zone of the Greenland ice sheet” by I. G. M. Wientjes et al.

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This is an interesting paper that meticulously documents the material, chemical and biological composition of material forming a dusty surface on the ice sheet (I am still unsure if all the dust is located in "holes", i.e., cryoconite holes, or whether it forms a surface lag, or is located "englacially" within the ice that is outcropping at the surface (I presume it is, since there is stratigraphy shown in one of the figures).

What is missing still is this: This is the first time I've ever heard of the "dark region"... I didn't know that Greenland Ice Sheet ablation zone had "dark regions" where what I would presume to be natural variation in dustiness suddenly builds a regional, large scale signal. (I haven't read into the citations, so perhaps this is known from other studies). Thus, after reading the abstract and perusing the conclusions and figures

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(I'm not a mineralogist, geochemist or biologist, so the very detailed descriptions in the middle of the paper were read only in a skim fashion), I was left asking: What causes this dark region? And what aspect of the study sheds light on this cause? Can some scenario of glaciologically meaningful mechanisms be constructed to explain what is seen?

Again, not all papers need to make a "big picture", and this paper certainly provides extraordinary data to investigate an interesting phenomena on the ice sheet. It would be nice, however, to see more speculation or a cartoon figure or something like that to suggest why the dark region exists at all.

Interactive comment on The Cryosphere Discuss., 4, 2557, 2010.