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Interactive comment on "Blowing snow in East Antarctica: comparison of ground-based and space-borne retrievals" *by* Alexandra Gossart et al.

Anonymous Referee #2

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In this article, Gossart and co-authors evaluate a satellite product of blowing snow detection based on the lidar CALIOP on board CALIPSO since 2006, which is compared with blowing snow events derived from ground-based ceilometers at Princess Elizabeth and Neumayer stations for the 2011-2016 period. Grid boxes of 1°x1° around the stations are defined where each satellite overpass is considered as a "case", and the authors set up a threshold of 10% or more of the satellite measurement along track for defining the presence of blowing snow.

The stations are located at a distance of around 1000 km from each other. Neumayer is closer to the sea (43 m a.s.l.) whereas Princess Elizabeth is located at the ice sheet

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Discussion paper

flank (1392 m a.s.l.) and shielded by nunatak mountains.

The two blowing snow detection products are already published : Palm et al. (2017, TC) for blowing snow transport derived from CALISPO, and Gossart et al. (2017, TC) for blowing snow detection with ceilometers at Princess Elizabeth and Neumayer.

An already known issue with satellite detection of blowing snow is that it does not detect blowing snow events under cloudy conditions (Palm et al., 2017). And it is also already known that most of blowing snow events at the two stations occur under cloudy conditions (92 % in Gossart et al., 2017). Here 95% of the events of blowing snow detected by ceilometers occur under cloudy conditions. This given, and despite the undoubtable work of the authors, Princess Elizabeth and Neumayer stations don't seem right locations to evaluate the satellite product. I don't see how the paper could be improved as the only point that can be assessed is whether the satellite product is able to *not* predict blowing snow under clear sky conditions, which the authors did but which I don't think is sufficiently of interest to be published in The Cryosphere. Maybe the paper can be redirected in improving cloud detection in CALIPSO?

In this view, I acknowledge the work of the authors, but I think because of the major issue in the ground of the paper described above, this article is not suitable for publication in The Cryosphere.

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