

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

Anonymous Referee #1

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In the manuscript, the authors compare the results of blowing snow detection of their recent papers using satellite retrievals from CALIPSO (Palm et al., 2011 and 2017) with novel ground-based ceilometer observations (Gossart et al., 2017), in order to estimate/validate/compare satellite-based retrievals with a point measurement on the ground ceilometer of blowing snow.

Although the purpose of manuscripts is of great interest for the surface mass balance study, the manuscript is well written and the methodologies are robust, the analysis in the manuscript suffers from major issues which make its results insufficient to be published on The Cryosphere journal.

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The first issue is that the authors use two Stations where the katabatic blowing snow phenomena are limited by their geographic location and associated climatic condition: Neumayer is located on the ice shelf, far from katabatic wind flow where blowing snow phenomena is mainly linked to synoptic storm, whereas Princess Elisabeth station is located at strong change of topographic slope surrounded wide ranging blue ice area with extensive snow sublimation process during katabatic blowing snow event. Moreover the data available for Princess Elisabeth station are limited to the summer season when the katabatic and blowing snow event are very limited or nul.

These topographic/climatic features limited the number of events detected by both methods, only 2 at Princess Elisabeth station, and none at Neumayer, as reported by Authors. The amount of the data to compare are not significant and limited strongly the value of results.

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