

Interactive comment on “Antarctic atmospheric boundary layer observations with the Small Unmanned Meteorological Observer (SUMO)” by John J. Cassano et al.

Anonymous Referee #1

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The manuscript presents a very clear and careful documentation of the SUMO UAS observations on the lower troposphere collected from the Antarctic during 2012 to 2017. The data set is unique and will probably receive a lot of attention. It was a pleasure to read the manuscript. I suggest acceptance of the manuscript subject to minor revisions specified below.

Line 29. Acronyme sUAS should be defined.

Figure 1. Increase font size for the texts below plots (a) and (b).

Table 1. Are you sure than SUMO can fly as fast as 42 m/s? Or is it only possible in strong tail wind?

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Table 2. Why "not applicable" is given for the accuracy of pressure and for the sensor time constant for pressure and wind?

Line 289. If 30 s is found good here, why 8 s is given for sensor time constant in Table 2?

Figure 4. Below the plot, very small dots are used to identify the dates. Increase the dot size for better readability.

Lines 318-328. The discussion is interesting but remains speculative, as no attempts are made to estimate the magnitude of advective heating / cooling. Also subsidence heating may play a role. Consider if it is better to drop these discussions or make some more effort to provide quantitative estimates (based e.g. on reanalysis fields) for the roles of horizontal heat advection and subsidence heating.

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