

Interactive comment on “Atmospheric observations made at Oliktok Point, Alaska as part of the Profiling at Oliktok Point to Enhance YOPP Experiments (POPEYE) campaign” by Gijs de Boer et al.

Anonymous Referee #3

Received and published: 23 May 2019

The article provides a good overview of the measurement activities at a very important measurement site. More details on the sensors and data quality would be nice, as specified below. In particular for the growing community using unmanned aerial systems, more specific descriptions would be helpful. I suggest to perform minor revisions, as suggested in the following, before publishing the manuscript.

- title: “Atmospheric observations” sounds very general. In the overview, mainly meteorological parameters are presented. What about aerosol? There are aerosol sensors, and aerosol measurements have been done. Why is this not included in the

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overview, and at least some profiles are shown? Are the aerosol data included in the data bases? I would suggest modifying the title to know what is meant by “atmospheric observations”.

- I. 194: which autopilot was used?
- Section 2.2: please specify exact type of each sensor, plus manufacturer and country of origin. This makes it easier for other users to identify the sensor, and do comparisons.
- I. 223: What is the typical turnaround time between two flights?
- I. 237: remove the bracket at the end
- I. 292/ Fig. 6: Please comment on the obvious gaps in the time series of the measurements
- I. 412: please show some results of the aerosol and cloud microphysical properties as well
- I. 417: up to which wind speed were radiosonde launches possible?
- I. 440/441: “derivation of wind estimates”, Table 2 – please provide error bars for wind speed!
- Table 1 and 2: please use the same style, e.g. with units of accuracy, put the caption either on top or at the bottom of the table, provide at least a conservative estimation on wind speed accuracy
- Fig. 4: which temporal resolution of the data is shown? Averaged over 30 min? 1 day?
- Fig. 5: The colour scheme is misleading. I would expect that colour indicate measurement days. What does the colour white mean here? I would mark the flight days, but not the non-flight days. I would further suggest leaving the setup days and the “No

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UAS/TBS Sampling Scheduled” white, as there were no measurements. The reader should have an overview of data availability, not on other activities. Please explain why you mention in particular the intercomparison days with a C. What does it mean for the data? Is the data better on this day? Was a new calibration performed?

- Fig. 7/8: Please explain the white dot – probably the launch site? Add in the caption that the balloon flight locations are marked in blue, and the DataHawk flights in red.

- Fig. 9: Very nice and important plot! It would be good to have some more discussion on it. Could you do something similar for aerosol, of course for lower altitudes only?

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2019-46>, 2019.

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