



Comment on **essd-2021-11**

Anonymous Referee #1

Referee comment on "Observations from the NOAA P-3 aircraft during ATOMIC" by Robert Pincus et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2021-11-RC1>, 2021

Review of Observations from the NOAA P-3 aircraft during ATOMIC by Robert Pincus et al.

This paper describes the observations that were gathered by the instruments on the NOAA P-3 during ATOMIC, which was an integral part of the EUREC4A field campaign. The paper is well written and the figures are well chosen.

I have only minor comments and suggestions.

It would be good to mention EUREC4A in the title or the abstract.

It would be helpful to increase the font size of the figure axes labels. They are a bit difficult to read, even in the electronic version.

Specific comments

Line 54. Add section number for consistency.

Line 61, or elsewhere. Give a reference for AXBTs?

Figure 1. It would be helpful to increase the size of the key and if possible have larger contrasts between some of the colors. The axes are not labeled. I think some of the caption would be better placed in the text.

Figure 2. It is obvious, but it would be good to state that the key is the same as for Fig. 1.

Line 89. Choose

Table 2. Mention that the microphysics instruments are made by DMT for consistency? Perhaps size distribution would be better than individual particle size. The current wording gives the impression that it's

possible to know about the actual size of each particle.

Line 96. Provide reference.

Line 100 and elsewhere. SI units?

Lines 113-117. Provide reference.

Line 120. Recommend instead of encourage?

Line 124. Refer to Table 2.

Line 132 and Table 2. It would be useful to state the information about CIP and PIP in Table 2.

Line 166. It would be useful to the readers to provide a brief description of the radar observations in Figure 6. 19 Jan 2020 instead of Jun 19.

Line 168. Table 2 mentions that the WSRA is a made by Prosensing.

Line 173. Provide a reference?

Line 176. Was the ProSensing device first deployed in 1980?

Table 3. I think it would be helpful to mention in the caption that the post-processed microphysics data are not included because the processing has not yet been completed.

Section 4.1.3. It would be good to produce the same quicklooks from all the aircraft that measured aerosols and cloud microphysics. Perhaps a note could be added to that effect in this paper.

Line 218. Hydrometeor rather than cloud drop.

Line 221. Will 10 Hz data also be available on request?

Figure 7. What are the units of relative humidity?

Line 237. Should that be 5 km? It is difficult to see if T increases with height -- stable layer? Is it possible to provide a reason for the one outlier relative humidity profile?

Section 4.2.2. It would be useful to know if the variation in temperature measured is quite normal for such a spatial scale. Provide a reference?