Earth Syst. Sci. Data Discuss., referee comment RC2
https://doi.org/10.5194/essd-2022-93-RC2, 2022

Comment on essd-2022-93

Anonymous Referee #2

Referee comment on "NOAA Air Resources Laboratory Atmospheric Turbulence and Diffusion Division's Measurements of Temperature, Humidity and Wind using Small Uncrewed Aircraft Systems to Support Short-Term Weather Forecasting Needs over Complex Terrain" by Temple R. Lee et al., Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2022-93-RC2, 2022

The authors present an intresting dataset of UAS profiles in complex terrain. Usually there are only short-term campaign-based data from UAS available. A longer observational period is thus quite interesting for the community. I think the article and the dataset are worth publishing, but there are some comments which should be adressed. Especially with regards to the dataset, some changes need to be done before the article and the dataset can be published.

Specific comments:
dataset:
- the repository of the dataset seems to be a simple FTP server. As the other reviewer mentions, the authors should get a DOI for the closed dataset which they want to publish. On the FTP server, changes are not traceable.
- There are quicklooks in PNG-format, but they are not described in the article. The images contain a copyright label, but the 'claims' should also be explained in the text. There are more variables in the quicklooks than are presented and mentioned in the article.
- there are some inconsistencies in the data structure. in the folder 01302020 is data from another date, probably copied there by accident!?

p.3, l.76: for the cold bias, does this mean low temperature AND low relative humidity? can you be a bit more specific?
p.3, l.75ff: Do the different biases that are found in different studies reflect the uncertainty of the sensors? Can it be quantified with +-0.5°C then for example?
p.4, l.101: when I quickly plotted the data to check its quality, I made the curious observation that flight height increases with temperature from 675 m (@ 0°C) to 750 m (@ 30°C). Do you have an explanation for that? Is the target altitude set as a pressure level or a height above ground?
p.5, ll.141ff: I think the data format could be described a bit more detailed, either in the text, or in the data repository. What do the header lines mean, etc. If there is a public description of the NSP-format, please provide a reference.