



Comment on **essd-2021-193**

Anonymous Referee #2

Referee comment on "EUREC⁴A's HALO" by Heike Konow et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2021-193-RC2>, 2021

Review of EUREC4A's HALO by Konow et al.

The manuscript describes the data collected during the EUREC4A field campaign onboard the HALO research aircraft, as well the archiving strategy and structure.

The paper is generally well written with only minor typo-corrections necessary, that are listed at the end of this review. However, some other more fundamental questions remain:

My first remark concerns the labelling of the cases, as proposed in Table 1, column "comments". Considering that the dataset is destined to become a permanent entry in the scientific literature, these funny names lose their interest. Replace them with a scientific summary of the case such as "coldPools", if a naming is deemed necessary. Later in line 65 it is mentioned that the names should "remind the reader of the principle investigator (PI)". This is another option, but then the names should be spelled out correctly, as later generations will need this information.

Another confusing description concerns the segments, that are called "kind" in line 71+. Is "type" a better wording? Include the term in Table 2 (segment type?).

In line 83 is written: "*Segments also contain a field called 'dropsondes'.*". Where? I don't understand this sentence? Table 1 is referring to dropsondes, right?

Line 110+ Why do you insist who took a photo? Is it for copyright reasons? Otherwise, I find this information irrelevant.

Figure 4: "*The photographs are representative for the Fish, Flowers, Gravel and Sugar type of organization patterns*" Explain!

Line 177: "*measurements suggest higher cloud cover in the beginning as well as towards the end of the campaign*" Why do you insist on averaging them if you know that they show a tendency. Better discuss the actual observed tendency.

Line 209: "*Synchronizing the processing, release, and even archiving of this data is neither practical nor desirable.*" I don't agree! This is highly desirable.

Which brings me to my main concern: the "How to Eurec4A"

""How to EUREC4A", an online and interactive Jupyter (what is that???) book"; ""How to EUREC4A" is a living document. It continues to mature through the addition of chapters",....

Table 6 gives the DOI of the data from the different instruments. Those seem to be frozen in time by the DOI. However, this "book" seems to treat the data in an evolving way and will be complemented by new campaigns and more data, different procedures, ...

From the point of view of a future generation scientist that wants to exploit the campaign data referenced in this paper and understand how they were combined to reach the published conclusions, this will become an impossible task. The current protocol will be lost in the various modifications made since.

Thus, I would advocate to freeze a copy of the current state of the "book" and DOI it, in order to conserve the current combination of different results for future reference.

The "How to Eurec4A" is the main new aspect, in addition to the catalogue of the already published other datasets. Thus, a correct preservation would seem a mandatory condition for acceptance of the current paper.

Minor remarks:

Line 15: add references for NARVAL-South and NARVAL2

Line 24: what is the meaning of "looser coordination"?

Line 25: "We do so by **by** describing how HALO was **tasked** during" replace by "We do so by describing how HALO was deployed during"

Line 41: "document the meteorological conditions (through photographs and)". Add "also" instead of bracket, as I imagine that other data were also used to characterize the meteorological conditions apart from photos

Table 1 caption: "all flights were local flights in that they took" replace by "all flights were local flights that took"

Line 53: explain BCO

Line 70: replace by "the second denoting the end of the segment"

Line 80: delete "or avoidable deviations from the kind definitions" or explain better

Line 81: replace "Because" with "As"

Line 130: replace "Information on to how" by "Information on how"

Line 194: "Viewed differently, about 90%". I don't understand the meaning of the expression. Please explain.

Line 227: replace "intake" by "input"

