Earth Syst. Sci. Data Discuss.,
https://doi.org/10.5194/essd-2020-325-RC2, 2021

Open Access Earth System Science Data Discussions

Interactive comment on "High-resolution in situ observations of atmospheric thermodynamics using dropsondes during the Organization of Tropical East Pacific Convection (OTREC) field campaign" *by* Holger Vömel et al.

James Franklin (Referee)

jameslfranklin@icloud.com

Received and published: 4 January 2021

Review of ESSD-2020-325, "High-resolution in situ observations of atmospheric thermodynamics using dropsondes during the OTREC field campaign", by Vomel et al.

Reviewer: James Franklin

Recommendation and general comments: Accept with minor revisions. This is a very well-written and concise description of the new NRD41 dropwindsonde and the dataset collected for the OTREC field campaign. The contribution will be very useful to re-

Printer-friendly version

Discussion paper

searchers working with the OTREC data; indeed, because of its clear presentation of NCAR QC post-processing procedures, the paper will be useful to researchers working with just about any dropsonde dataset. I have only a few very minor comments and suggestions for improvements.

I'm not sure if this is ESSD style or the authors' personal style, but I found it difficult to identify paragraph breaks in the manuscript. With neither a blank line nor an indentation to mark the beginning of a new paragraph, I found myself frequently interrupting the flow of the reading to think about whether the authors were starting a new topic, particularly when encountering one-sentence paragraphs. I imagine other readers will have similar difficulty. Hopefully the ESSD house style allows for a more obvious identification of paragraph breaks.

The quality of the figures is generally good, although with figures 9-11 it's hard to tell exactly how the data values and colors correspond. For example, in Fig. 9 does the top-most purple color correspond to all data at least 30.0 but less than 35.0? Or are the colors centered on the listed values (27.5-32.5)?

Specific comments:

1. L25. In all my years as a hurricane researcher and forecaster, I wasn't aware of the argument or suggestion that easterly waves actually formed in the far eastern Pacific (or perhaps I've just forgotten in my advanced age). Could the authors please provide a reference?

2. L45. The sondes were all over-water releases, no? Maybe water, surface, or sea surface would be better choices than ground?

3. L103. I'm not sure what 3 09 053 refers to, but I assume that the listed reference would provide that information (I didn't check).

4. L107. I think it would provide helpful context to users to provide the equilibration times of the older sondes.

Printer-friendly version

Discussion paper

5. L110. I'm curious what would be the point of providing corrections to the GTS long after the data had been operationally ingested into numerical models.

6. L145. Data users might appreciate a little bit more information here on how the sensor contamination occurs and how the reconditioning process works.

7. L164. Can you describe how the reported speed uncertainty is determined and/or how a user should interpret it?

8. L185. If I recall, with the larger sonde fast fall data were not routinely transmitted for operational use due to concerns over data accuracy. I gather that you feel this is not an issue with the newer, faster sensors?

9. L209. Is this the total distance traveled, or the net distance between launch and splash?

10. Figure 3. Any speculation on why there was a positive bias?

Typos and editorial comments:

1. L14. . . .648 dropsondes. . .

2. L102. . . .each sounding as it was. . .

3. L179. . . .between three and six were damaged. . .

Interactive comment on Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2020-325, 2020.