

Editor's comment

May 22, 2025

The authors present a valuable data set in a concise and clear way. Previous revisions have made improvements, but I do have some minor suggestions and comments to consider before publication.

1 General comments

Line 25: “Northern Finland” should be “northern Finland”. It could be useful to add a sentence on what you mean with cold and clean or also cite some overview paper of the location like Lohila et al. 2015.

Line 29: Do you have references for these three PaCE campaigns? I would suggest to add them if you have them.

Line 34: “Northern Finland” should be “northern Finland”.

Line 71: “up to about 7.6 km” should be “up to a range of about 7.6 km”.

Line 99: “single channel” should be “single-channel”. There is no good correlation, please change this to indicate the actual correlation coefficient and call it a positive correlation. It would sound a bit more clear, if you split the sentence into two: “Measured LWP values... 7 g m^{-2} . For smaller values the single-channel passive radiometer measured a higher LWP with a mean difference of 21 g m^{-2} .”

Line 135: “multichannel” should be “multi-channel”.

Line 142: You should add this as a citation and add a date to the link for when you last accessed it: <https://www.ecmwf.int/en/publications/ifs-documentation>, last access: XX Month YYYY. If applicable you should also add authors and year of publishing, as you did for the GitHub repositories.

Line 147: “2022 PaCE” should be “PaCE 2022”.

Line 168: You adjusted the wording earlier in line 156 to categorization. I would suggest to do the same here.

Line 180: “machine learning-based” should be “machine-learning based”.

Line 328: Toledo 2020 is cited as a discussion paper and should be upgrade to the final published version (<https://doi.org/10.5194/amt-13-6853-2020>).

2 Comments regarding figures

Figure 2: I am not sure, but it looks like the hatched areas are added outside of matplotlib. If you can, I would suggest to add hatched areas directly to the plot via Matplotlib. The following is a small snippet:

```
ax.axvspan(start_time, stop_time, color='none', hatch='/')
```

y-label of panel (b) does not contain the quantity (LWP).

Figure 5: “multichannel” should be “multi-channel”

References

Lohila, A. et al. (2015). “Preface to the special issue on integrated research of atmosphere, ecosystems and environment at Pallas”. In: *Boreal Environment Research*. Vol. 20. 4, pp. 431–454.