

Comment on **essd-2022-334**

Anonymous Referee #1

Referee comment on "EURADCLIM: the European climatological high-resolution gauge-adjusted radar precipitation dataset" by Aart Overeem et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-334-RC1>, 2022

The manuscript presents a new precipitation dataset that covers most parts of Europe and is based on the OPERA gridded radar dataset. The algorithms for filtering non-meteorological echoes are described and evaluated as well as the adjustment to gauge data. Limitations of the dataset are discussed and ways to improve the climatological precipitation dataset are given.

The manuscript fits in the scope of *ESSD*, it is well written and clearly structured. The described new European radar climatology is unique, of high interest and importance for the community and allows for a variety of applications and studies. I recommend publishing the manuscript after taking the following (minor) suggestions and comments into account:

- 3, L.83-85: Does that mean, that in case of 10 minute temporal resolution the 10-min file from 10:10 UTC is used for the 10:15 UTC composite?
- 11, Eq.1: Why is $S_{w,g}$ set to the value of T (0.25 mm) in case it is lower than T ? In line 207 the authors say that 1-h radar-gauge pairs are only used for merging if the gauge precipitation exceeds 0.25 mm. Wouldn't that mean that no factors should be computed in case $S_{w,g}$ is lower than T ?
- 12, L. 235-241: An example of the adjustment fields for $v = 100000$ and $v = 0$ would be beneficial to understand the influence of the mean-field bias and the local spatial adjustment.
- 20, Fig.8: It might be better to use the same colourbar for OPERA and EURADCLIM. Especially in the upper example the smaller range of precipitation values in the colourbar makes the EURADCLIM product look worse than the OPERA product. Maybe a logarithmic scale can help to compensate the different ranges of precipitation values.
- 22, Section 4.4: Have the authors compared their results to the corresponding national radar data sets? How similar are the extreme values in EURADCLIM and the national products?