



EGUsphere, referee comment RC2
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Comment on egusphere-2022-269

Anonymous Referee #2

Referee comment on "*Rolling vs. seasonal* PMF: real-world multi-site and synthetic dataset comparison" by Marta Via et al., EGU sphere,
<https://doi.org/10.5194/egusphere-2022-269-RC2>, 2022

Comments on "Rolling vs. Seasonal PMF: Real-world multi-site and synthetic dataset comparison" by Via et al.

This paper illustrates the comparison results between rolling and seasonal PMF methods using a synthetic dataset and real-world ambient datasets. They deployed multiple tools in many dimensions to evaluate the comparison results. In general, they found the rolling window PMF method perform slightly better than seasonal PMF method when the source apportionment for long-term dataset is required. The whole paper is well written and organized. I only have a few questions, as shown below.

Major comments:

- For rolling window method, why were 14 days or 28 days chosen for a timing window. Can other arbitrary days e.g., 7 days or 20 days be applied? I also do not understand why 1 day shift was used. How about the half day or other days.
- For the seasonal PMF, can the MO-OOA and LO-OOA be compared among different seasons since free PMF was used. The MO-OOA and/or LO-OOA among different seasons might have different spectra and oxidation level. Are the spectra of MO-OOA and LO-OOA the same compared to the rolling method.
- Is there any difference among the spectra of $SOA_{bio}^{1/4}$, SOA_{bb} and SOA_{tr} ? How were these spectra obtained and which oxidation level was chosen? The similarity of BBOA and SOA_{bb} might obscure the source results.

- Figure 3 b-c, This figure needs to be revised, which shows very small legend and label.

Minor comments:

Line 307 delete extra "m/z"

Line 384, line 394 and line 426 What is "58-OA"? There shall be explanation for the abbreviation name of each PMF factor since some of the readers might not be familiar with these names.