Comment on amt-2022-284
Anonymous Referee #2

Referee comment on "Relationship between the sub-micron fraction (SMF) and fine-mode fraction (FMF) in the context of AERONET retrievals" by Norman T. O'Neill et al., Atmos. Meas. Tech. Discuss., https://doi.org/10.5194/amt-2022-284-RC2, 2022

The authors presented a simple sub-micron fraction versus fine mode fraction linear equation that makes it possible to better understand the well recognized empirical result of SMF being greater than FMF. The paper is well-constructed, and the statistical method is serious analyzed and has scientific value. Overall, publication is recommended after addressing the following minor revisions.

- Line 91: "governed by that relationship", Maybe it would be better for the reader to understand the paper by stating in the text which relationship is governed by.
- Table 1 and line 208-212: for the classification of aerosol types at AERONET sites, maybe some citations for aerosol types needed here as a basis for the classification of different aerosol types.
- Figure 3: Maybe it should be \(1 - \varepsilon_c - \varepsilon_f\) instead of \(1 - \varepsilon_f\)?
- Line 213: First line indent.
- Line 244: First line indent.
- Line 253, 261 and 273: figure S1 was not found in the paper.
- Line 275: As well, Figure S2 was not found in the paper.
- Figure A1 caption: maybe it should be "\(\tau_f \text{ vs } \tau_f'\)" instead of "\(\eta' - \eta \text{ vs } \delta\square\square\square\delta\square\square\square\)?