Atmospheric Chemistry and Physics Discussions

Atmos. Chem. Phys. Discuss., referee comment RC1
https://doi.org/10.5194/acp-2022-654-RC1, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on acp-2022-654

Anonymous Referee #1

Referee comment on "Measurement report: Aerosol vertical profiles over the western North Atlantic Ocean during the North Atlantic Aerosols and Marine Ecosystems Study (NAAMES)" by Francesca Gallo et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2022-654-RC1, 2022

The measurement report by Gallo et al. analyzed in-situ measurements during three NAAMES field campaigns in winter, spring, and summer, respectively. The results are interesting and well discussed, and I only have a few concerns.

1. Sect 3.2: During NAAMES 1, why only BC show the MBL peaks on 12th, 2015 and Nov. 14th, 2015? If it was the continental origins, the CO should also be higher. Has the authors considered the possibility of ship emissions?

2. Fig. 6a-c: The correlations between CO, Sulfate, Organics and BC during NAAMES 1 are strongly biased by the BC outliers. How would the correlations be like if any BC > ~20 ng/m3 are excluded, and what's the explanations? That would be more representative of the pristine marine environment in winter.

3. Minor corrections: page 10, line 24: should be "3.3.2"; line 27: duplicate "%".