

Atmos. Chem. Phys. Discuss., referee comment RC1  
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## Comment on acp-2022-52

Anonymous Referee #1

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Referee comment on "Relationships linking satellite-retrieved ocean color data with atmospheric components in the Arctic" by Marjan Marbouti et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2022-52-RC1>, 2022

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Oceanic emission is an important source of atmospheric trace components in the marine boundary layer. Ocean Color data is a valuable indicator for oceanic biogenic activities and emissions. This paper discussed the relationship between Ocean Color data, chlorophyll a and primary production, and atmospheric methane sulfonic acid, sulfuric acid, iodic acid, HOM and aerosols. However, these discussions are restricted to the correlation coefficient, but the explanation of the data analysis results are relatively simple. The scientific conclusions, such as how the oceanic biogenic activities affect atmospheric components, are not presented. I recommend that this paper is not suitable for publication in this version.

Special comments:

1. The authors described NPF with large length in the Introduction, but their own studies had little relationship with NPF. What is the scientific objective of this paper?
2. Why the authors just discussed these components, i.e. methane sulfonic acid, sulfuric acid, iodic acid, HOM and aerosols, with Ocean Color? These components have some similar source, atmospheric environmental effect, or they just measured these components?
3. Is the aerosol particle investigated in this paper mass concentration or number concentration?
4. P140: Various types of data are involved in this paper, but there are few introductions about data quality control. For example, how does SMPS for data quality control?
5. P255-260: Usually, the generation of new particles is under 10 nm or 20 nm. In this paper, 10-50nm particles are selected to represent the generation and growth of NPF, and 100-450nm particles are selected to represent the aging particles. What is the basis? Please add references or explain in detail.