

Interactive comment on “New particle formation events observed at the King Sejong Station, Antarctic Peninsula – Part 2: Link with the oceanic biological activities” by Eunho Jang et al.

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Received and published: 10 April 2019

We thank to Dr. Allan for providing insightful suggestions that improved the readability of our revised manuscript. Our responses to Dr. Allan's comments are stated below. The revised manuscript was uploaded in the form of a supplement

Scientific comment

1. Need to add explanation on the roles of iodine compounds in new particle formation events: We agree that iodine-containing compounds which produced by both biotic and abiotic processes are one of the key compounds contributing to new particle

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formation in the Arctic and Antarctic regions. Unfortunately, we do not have observational evidence (i.e., chemical analysis of halogen compounds) to support the roles of iodine-compounds in formation of new particles in this study. In the revised manuscript, we have added recent findings regarding the potential roles of halogen compounds in the 'Introduction' part (P2, lines 17–22). Molecular-scale measurements of chemical species (e.g., sulfur-, nitrogen-, and halogen-containing compounds) involved in nucleation processes are required to provide direct evidence for the contribution of these compounds to the formation and growth of aerosol particles and to understand their climate feedback roles in the remote marine environment. Therefore, we have added a short paragraph indicating the limitations of the present study and the scope of future studies in this regard (P9, line 33 – P10, line 8).

Please also note the supplement to this comment:

<https://www.atmos-chem-phys-discuss.net/acp-2018-1181/acp-2018-1181-AC4-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-1181>, 2018.

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