Atmos. Chem. Phys. Discuss.,
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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Secondary Sulfate is Internally Mixed with Sea Spray Aerosol and Organic Aerosol in the Winter-Spring Arctic" *by* Rachel M. Kirpes et al.

Anonymous Referee #1

Received and published: 4 December 2017

This paper presents rare direct measurements of Arctic aerosol during the winter-spring transition and adds valuable insight and understanding to the body of knowledge regarding aerosol chemistry at the individual particle level. The finding that all secondary sulfate was present as an internal mixture with SSA is significant, and changes how these kinds of particles are modeled. The paper is clear, well-written, and sufficiently detailed. The figures are well-done, informative and easy to understand. I have only minor corrections to be addressed prior to acceptance for publication.

I have no detailed specific (scientific) comments, the paper was extremely well presented.

Technical corrections: Spaces appear between numbers and percent symbol, probably typographical or Latex error.

Pg 3 Line 12: Consider adding "(Cl2)" after "chlorine" to be clear about which form of chlorine is liberated.

Pg 9 Line 7 and Page 11 Line 13 (two instances): use "composed/composing" instead of "comprised/comprising"

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2017-998, 2017.