

# ***Interactive comment on “Revisiting properties and concentrations of ice nucleating particles in the sea surface microlayer and bulk seawater in the Canadian Arctic during summer” by Victoria E. Irish et al.***

**K. A. Prather**

kprather@ucsd.edu

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I really enjoyed reading this paper. It is not surprising that there were differences in the IN between years. There could even be differences within a single year. It is important to note that the production mechanism determines how much of the SSML will be transferred to SSA...and there are difs in IN activity of sea spray produced by jet vs film drops (Wang, et al., PNAS, 2017, The role of jet and film drops in controlling the mixing state of submicron sea spray aerosols). The IN efficiency of jet drops has been shown in this publication to be higher than film drops—which goes against the common

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assumption that there will be more bioparticles in the SSML than in bulk seawater. Further, the # of jet vs film drops can change over the course of a bloom (see Fig 1 below taken from supp info in above referenced PNAS paper). It is important to remember that physical, biological, and chemical factors all control the formation and composition of SSA and will thus affect the IN activities.

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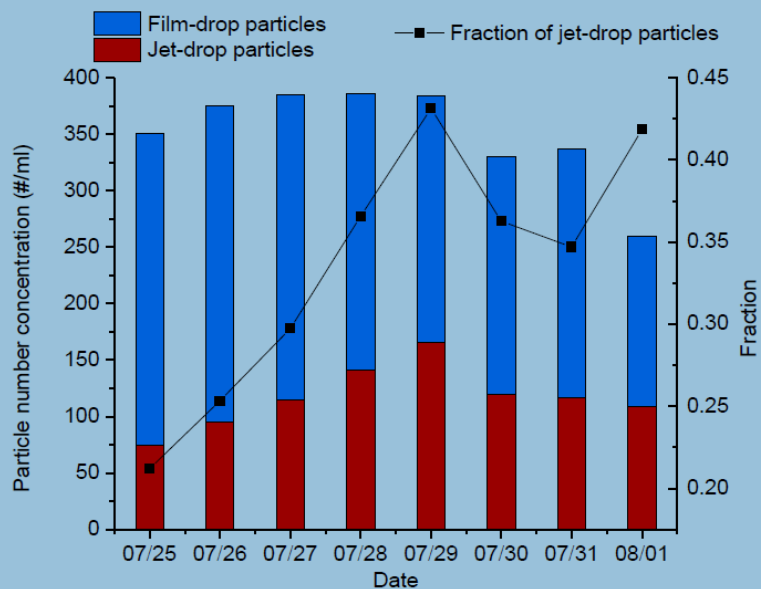
Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-641>, 2018.

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**Figure S9.** Time series of number concentrations of film drop particles and jet drop particles measured during the phytoplankton bloom. See main text for the method of calculation.



**Fig. 1.** jet vs film drops over course of a phytoplankton bloom

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