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## Abundance of ice-nucleating particles from the Gruvebadet observatory in Svalbard during 2017-2019

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Atmospheric ice-nucleating particles (INPs) have substantial cloud-phase feedback, and ambient INP concentration may increase in the Arctic region in response to warming (Murray, Carslaw, and Field, 2020). Currently, there are limited INP observations in the Atlantic sector of the Arctic. With the goal of generating new ambient INP data in this particular region, we have measured and studied INP concentrations from Ny-Ålesund (Spitsbergen, Svalbard) during 2017-2019. More specifically, we collected aerosol particles on membrane filters at the Gruvebadet observatory (approx. 50 m above sea level), where a custom-built isokinetic laminar flow inlet is installed. Individual filters collected aerosol particles for 27 hours (at least) to several days with a constant sampling flow of less than 12.8 LPM, which was regulated by a critical orifice. Our sampling periods were intermittent, but covering all meteorological seasons overall. With these filter samples, we have conducted the offline immersion measurements to produce the INP number concentration dataset at temperatures above -25 °C. We will also present the comparison of our immersion data to previous Arctic INP data. Such data would be invaluable to constrain current atmospheric models and estimate their potential impact on aerosol-cloud-climate interactions in the Arctic region.

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**Reference:**

Murray, B. J., Carslaw, K. S., and Field, P. R.: Opinion: Cloud-phase climate feedback and the importance of ice-nucleating particles, *Atmos. Chem. Phys. Discuss.*, <https://doi.org/10.5194/acp-2020-852>, in review, 2020.