

Supplement of: The impact of blowing snow events on ice nucleating particles in the Central Arctic

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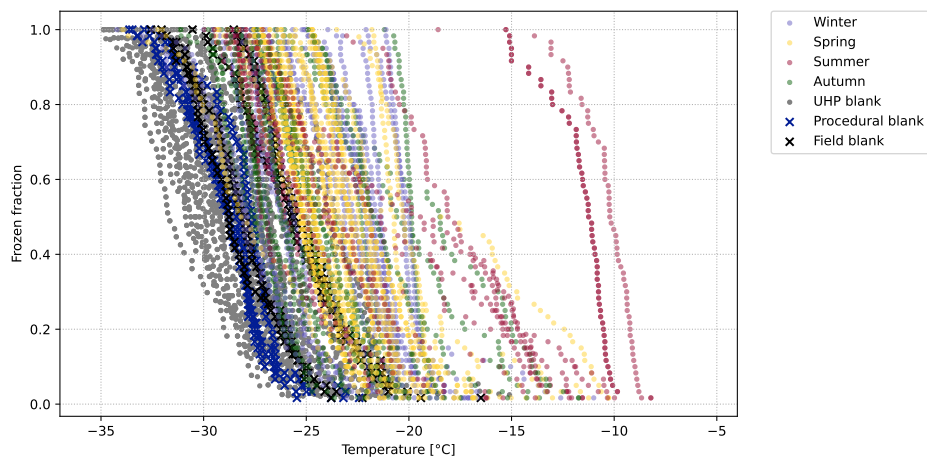


Figure S1. The fraction of droplets frozen per filter sample as a function of temperature for the 75 filters analysed, shown alongside their corresponding UHP daily blanks, procedural blanks, and field blanks. Samples have been colour-coded according to season, UHP blanks are shown in grey, the 4 analysed procedural blanks are shown in blue crosses, and the 4 analysed field blanks are shown in black crosses.

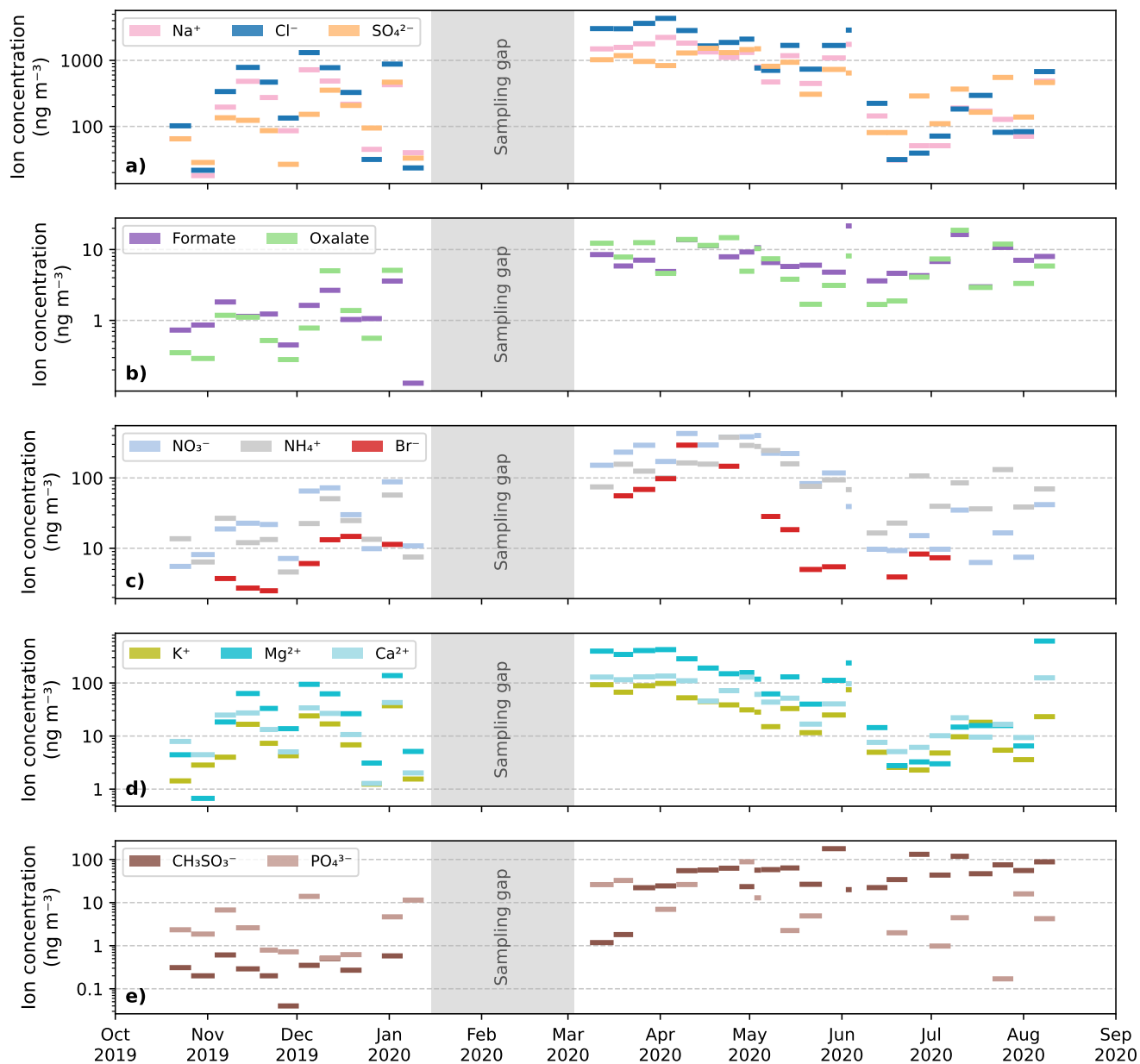


Figure S2. Atmospheric concentrations of major ions in aerosol collected on filter samples at 1-week resolution, with the exposure time for each filter indicated by the horizontal bar length. The period of missing measurements is shown in grey. Note the different y-axis logarithmic scales.

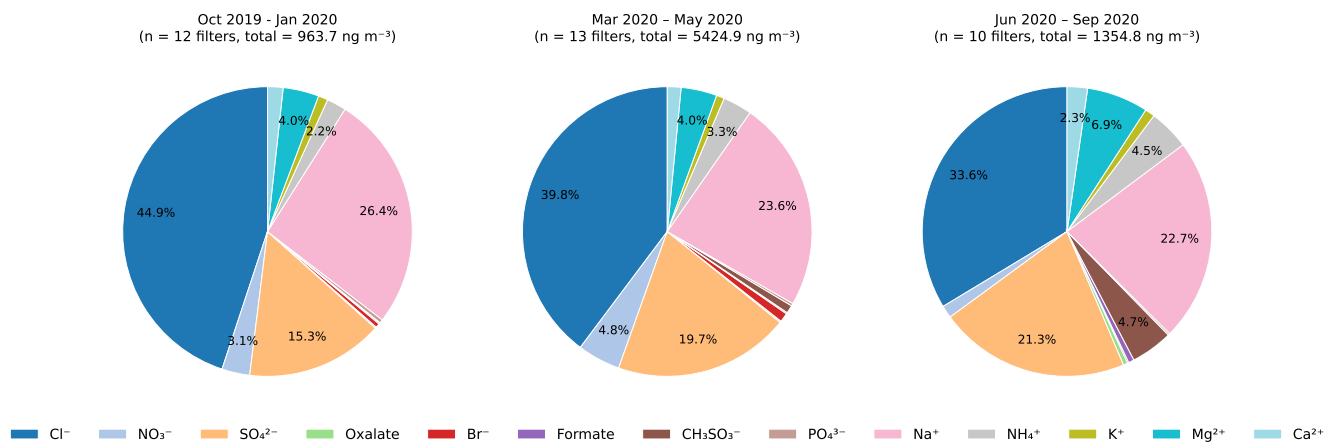


Figure S3. Pie plots of major ions from aerosol filters for the three distinct periods identified for atmospheric ion composition in Sect. 3.2.

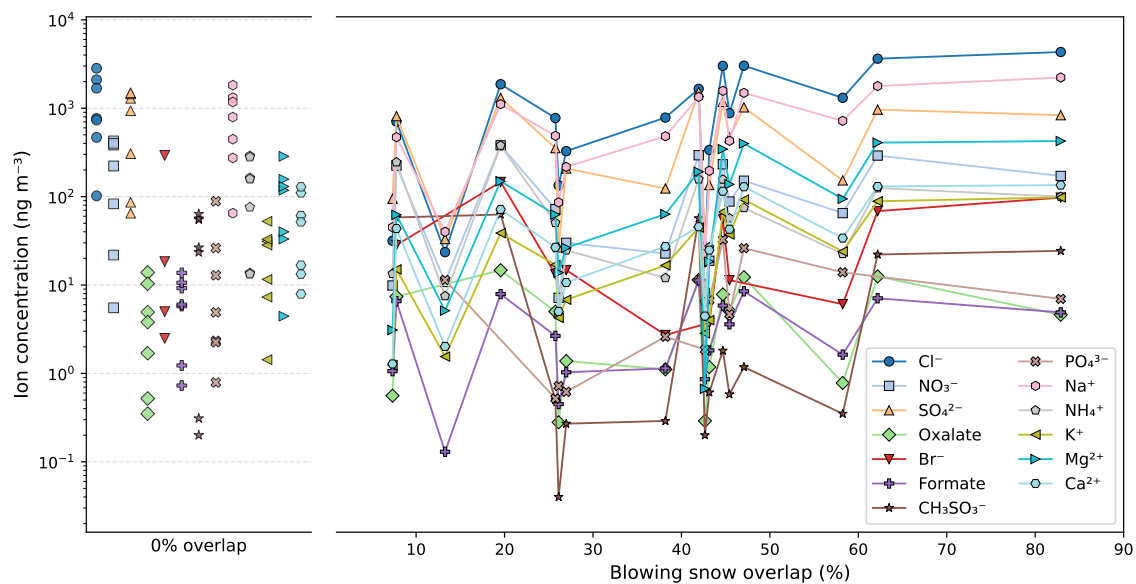


Figure S4. Concentrations of major ions from aerosol filter samples at 1-week resolution during the blowing snow period (October 2019 to May 2020) against the percentage that each sample overlaps in time with BSEs. Samples that do not overlap with BSEs (0% overlap) are shown separately on the left side. A logarithmic scale is used for visual clarity due to the large difference in orders of magnitudes across ions.

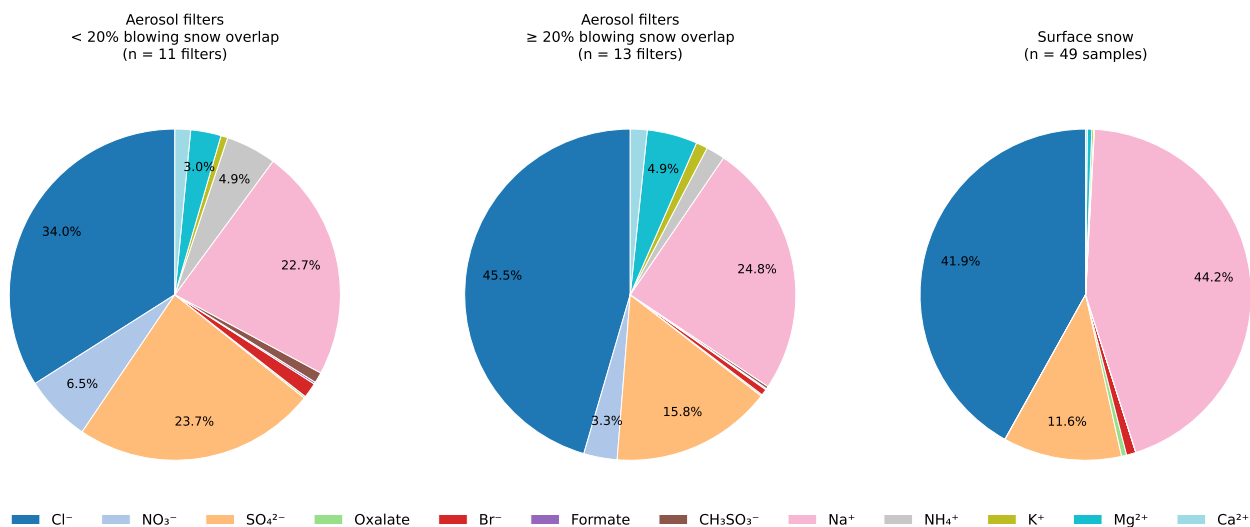


Figure S5. Pie plots of major ions for aerosol filters with < 20% overlap with BSEs, ≥ 20% overlap with BSEs, and for surface snow. Filter samples are restricted to those collected during the blowing snow season (October 2019 to May 2020)

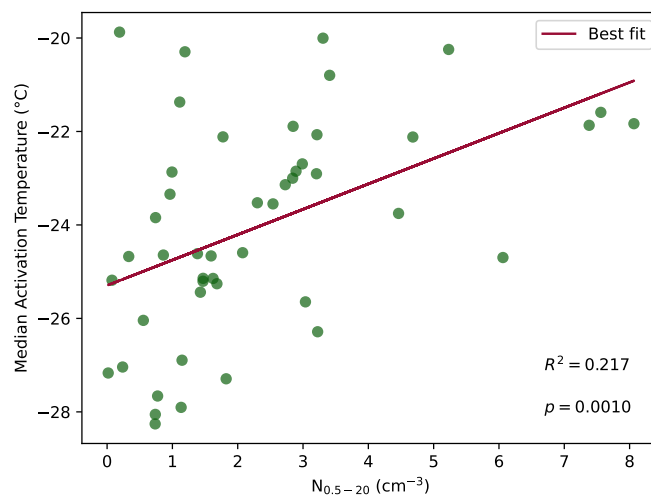


Figure S6. Median activation temperatures of 1 μL sample droplets from filter samples taken during the blowing snow season (October 2019 to May 2020) against particle concentration in the diameter range 0.5 – 20 μm . The line of best fit is shown in red, with a coefficient of determination $R^2 = 0.217$, and a p-value $p = 0.001$.

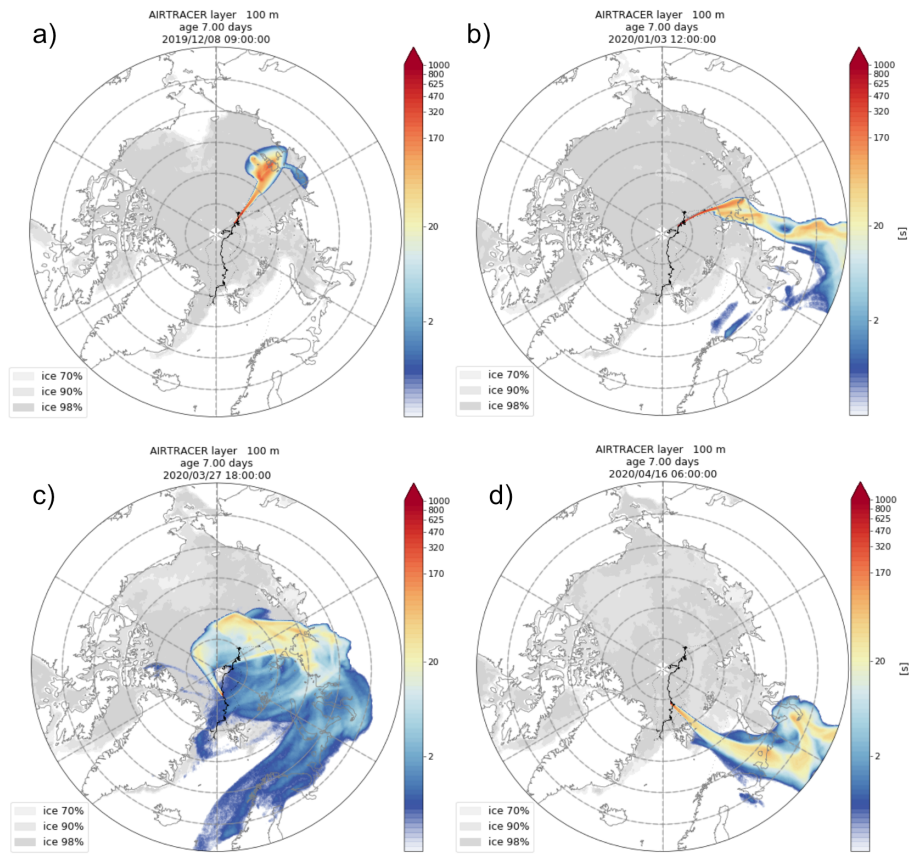


Figure S7. 7-day air parcel history from trajectory analysis from the FLEXPART model simulations, performed by the FLEXPART group at the University of Vienna, for the four case studies (<https://img.univie.ac.at/webdata/mosaic>).