

INP measurements at Jungfraujoch during CLACE

Daniel Weber (1), Lisa Schneider (1), Heinz Bingemer (1), Martin Ebert (2), and Joachim Curtius (1)

(1) Institute for Atmospheric and Environmental Sciences, Goethe University Frankfurt, Frankfurt, Germany
(weber@iau.uni-frankfurt.de), (2) Institute for Applied Geosciences, Technical University of Darmstadt, Darmstadt, Germany

During the CLACE/INUIT field campaign at the high altitude research station Jungfraujoch (Switzerland, 3580 m a.s.l.) in January/February 2017 aerosol particles were collected and ice nucleating particles (INP) were analyzed in the ice nucleus counter FRIDGE. Particles were sampled on membrane filters and measured by freezing 500 droplets of $0.5 \mu\text{l}$ each of aqueous extracts of the filters on the cold stage of FRIDGE. Additionally, particles were sampled via electrostatic precipitation onto silicon wafers, which were analyzed in the vacuum diffusion mode of FRIDGE by growing macroscopic ice on INPs. Subsequently the elemental composition of more than 200 individual INPs has been determined by electron microscopy with energy-dispersive X-ray microanalysis (EDX).

We will discuss a time series of the INP concentration that also includes a short period of advection of Saharan dust particles. The EDX analysis shows the dominance of aluminosilicates and C-rich particles in the INP fraction. INP size ranges predominantly between $1\text{-}5 \mu\text{m}$ in diameter.