



Aerosol Chemical and Physical Properties Over an Ice-Free Region of the Arctic During the International Chemistry Experiment in the Arctic LLower Troposphere (ICEALOT)

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Atmospheric aerosol particles accumulate during the winter and spring in the Arctic resulting in a phenomenon referred to as "Arctic Haze". Measurements of aerosol properties are needed to assess the sources of these particles and their impact on climate. During March and April of 2008, an International Chemistry Experiment in the Arctic Lower Troposphere (ICEALOT) was conducted aboard the R/V Knorr in the North Atlantic Ocean and the Greenland, Norwegian, and Barents Seas from 41-80°N. Here we report the chemical and physical properties of the aerosol measured during the experiment. FLEXPART emission sensitivities are used to divide the cruise track into five regions based on emission sources. Sulfate was the dominant anthropogenic aerosol component in all regions sampled although during periods of high wind speeds sea salt dominated the submicrometer mass. The "Arctic Haze" measured during ICEALOT was a well aged (uni-modal) acidic aerosol with sulfate comprising 62% of the non-sea-salt submicrometer aerosol mass. The organic aerosol in the North Atlantic and Arctic appeared to be less oxygenated than what is generally found in rural/remote regions.
<http://saga.pmel.noaa.gov/Field/icealot/index.html>