



The abundance of ice nuclei during airborne measurements over Germany and the Caribbean

A.. Danielczok (1), H. Bingemer (1), J. Curtius (1), and P.J. DeMott (2)

(1) Atmospheric and Environmental Sciences, J.W. Goethe University, Experimental Atmospheric Research, Frankfurt am Main, Germany (bingemer@iau.uni-frankfurt.de), (2) Department of Atmospheric Science, Colorado State University, Fort Collins, Colorado

The tropospheric abundance of ice nuclei (IN) acting at -8 to -18 °C in the deposition and condensation nucleation modes was investigated during series of research flights on board a Learjet over northern Germany in June 2011 and on board of the NSF/NCAR C-130 during the ICE IN CLOUDS EXPERIMENT – TROPICAL (ICE-T) over the Caribbean in July 2011.

Ice nuclei were collected from the air by electrostatic precipitation of aerosol onto silicon substrates. Samples were subsequently analyzed in the laboratory by the isothermal static vapor diffusion chamber FRIDGE (FRankfurt Ice Nuclei Deposition FreezinG Experiment).

IN abundance in the free and upper troposphere varied between < 1 and 50 IN L-1 in the upper troposphere over Germany, and between < 1 to 40 IN L-1 in the lower and middle troposphere in the Caribbean. A few dust layers were encountered. The results will be presented and discussed in the light of trajectory analysis and other supporting information.