



UV photolysis studies of peroxy compounds trapped in water ice

Otto Schrems, Michael Gand, and Thaddäus Bluszcz

Alfred Wegener Institute, Helmholtz Center for Polar and Marine Research, Climate System Department, Bremerhaven, Germany (otto.schrems@awi.de, +49 471 48311425)

Small ice particles which can be formed in different altitudes on one hand but also snow and ice surfaces on the ground on the other hand play an important role in the chemistry of the Earth atmosphere. Consequently, knowledge about the uptake and incorporation of atmospheric trace gases in ice particles as well as their interactions with water molecules is very important for the understanding of processes at the air/ice interface. In addition the photochemical decay of trace gases at ice surfaces or in the bulk ice are of great interest.

We have investigated the interaction of atmospheric peroxy compounds like methylhydroperoxide (MHP), peroxyacetyl nitrate (PAN), and peroxyacetic acid (PAA) with crystalline water ice in the laboratory. These species were either deposited on ice surfaces or incorporated into the bulk ice at very low temperatures. The samples were then photolysed with UV light and the photolysis products were identified by cryogenic FTIR spectroscopy. A detailed analysis of the product distribution will be presented.