

Interactions and feedbacks between ice/snow and tropospheric chemistry

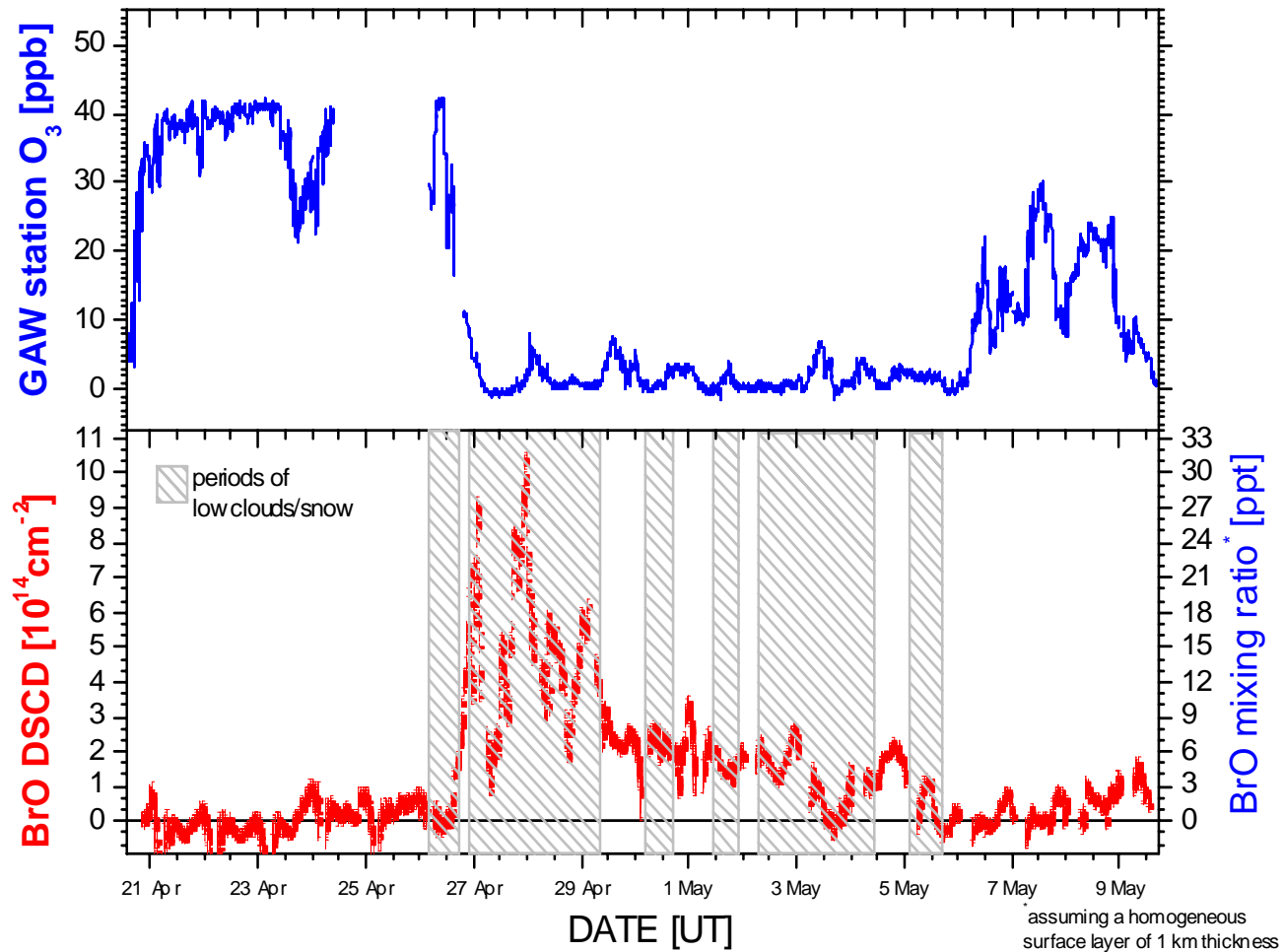
Jean-Francois Lamarque and John
Orlando

Atmospheric Chemistry Division

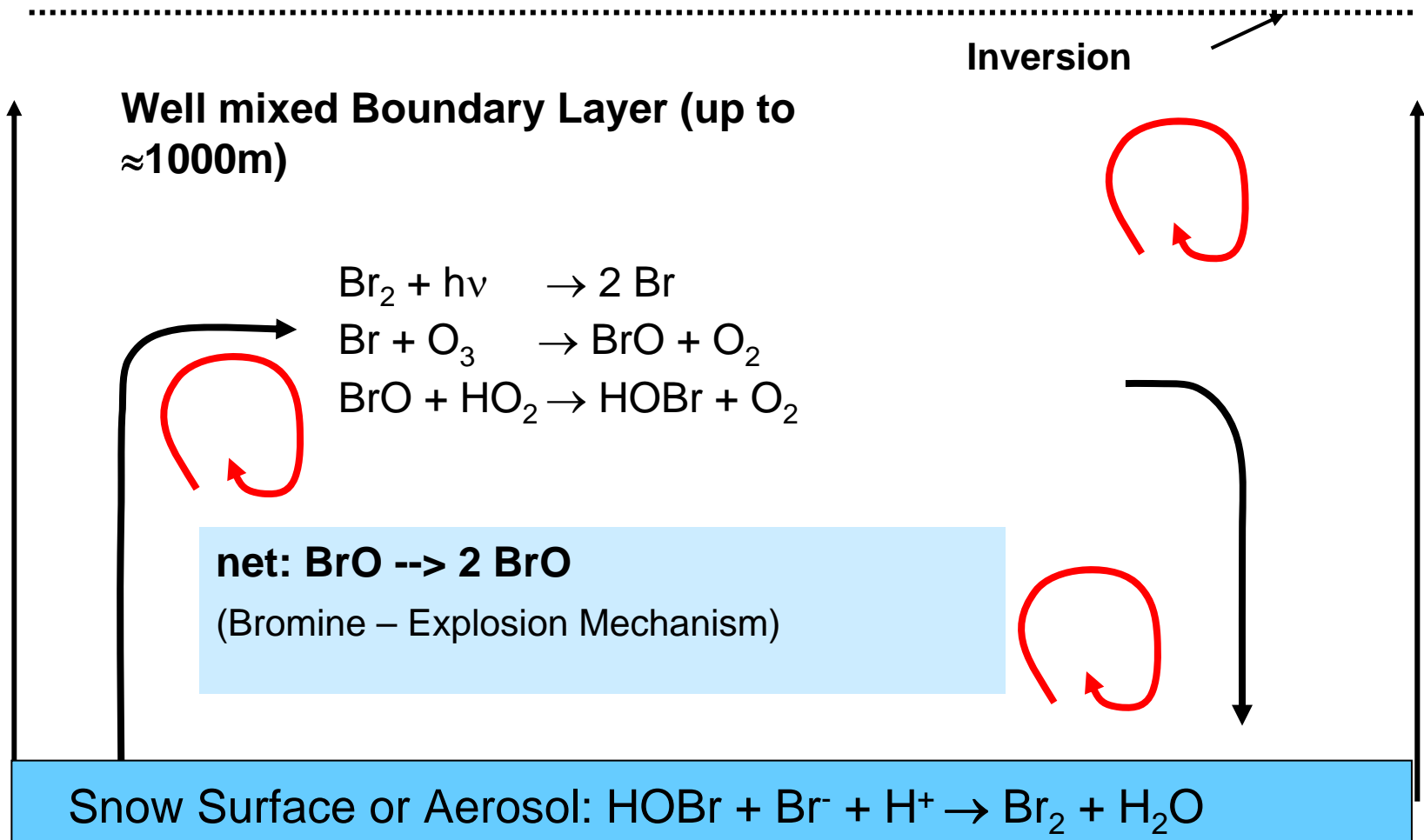
NCAR

Motivation

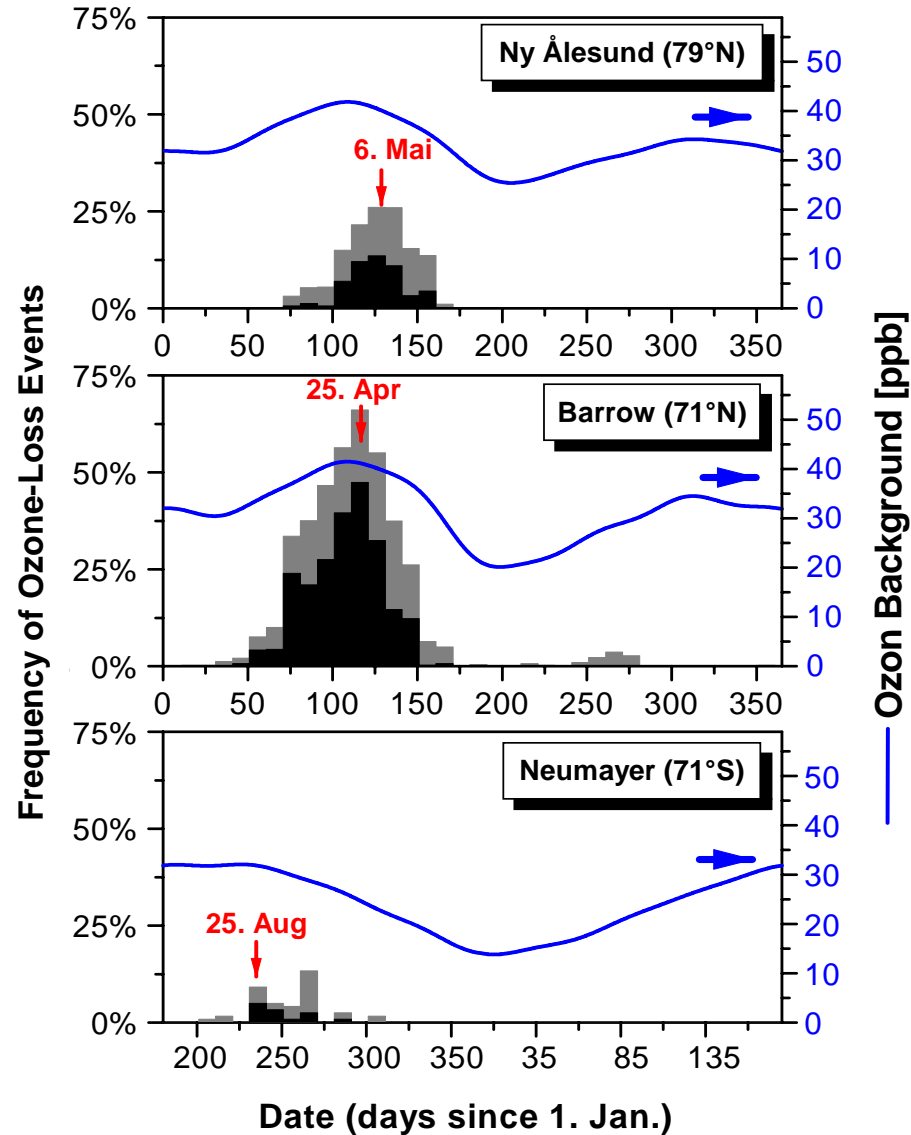
ALERT2000 GAW ozone / DOAS BrO time series



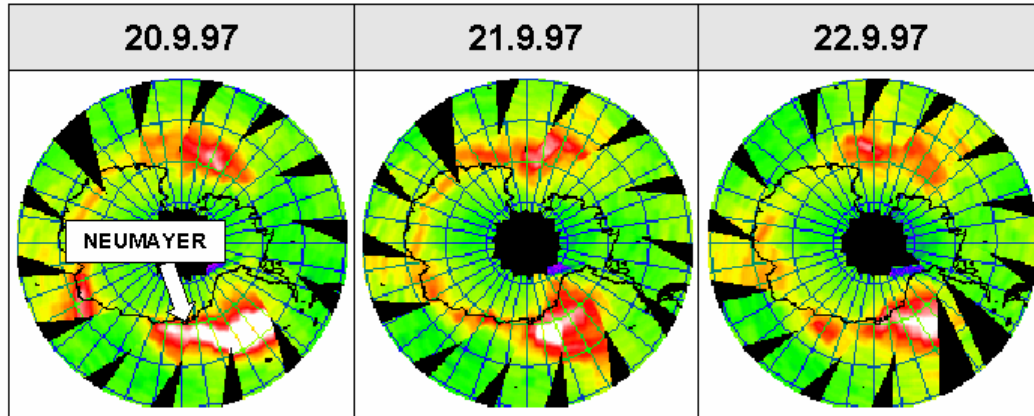
PBL chemistry



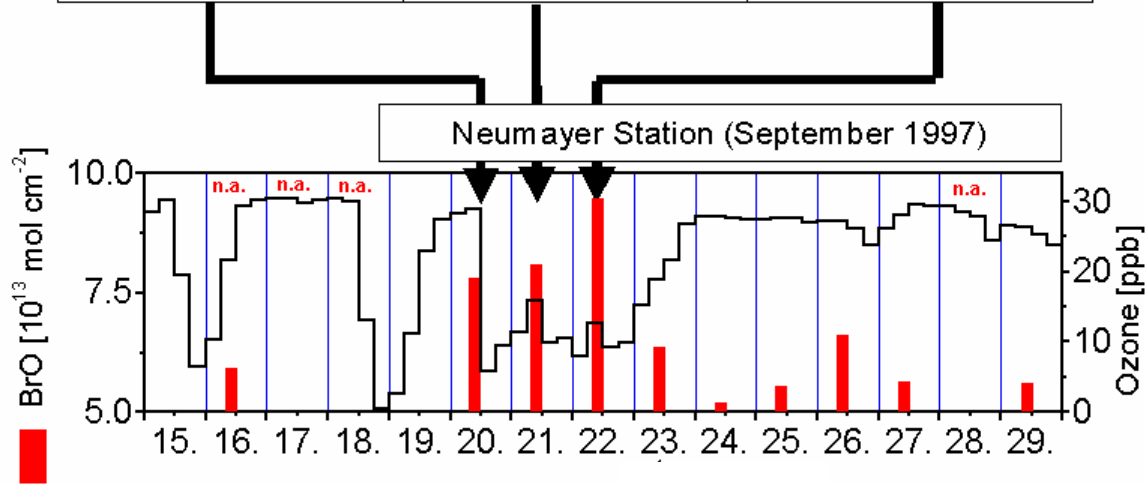
Annual significance



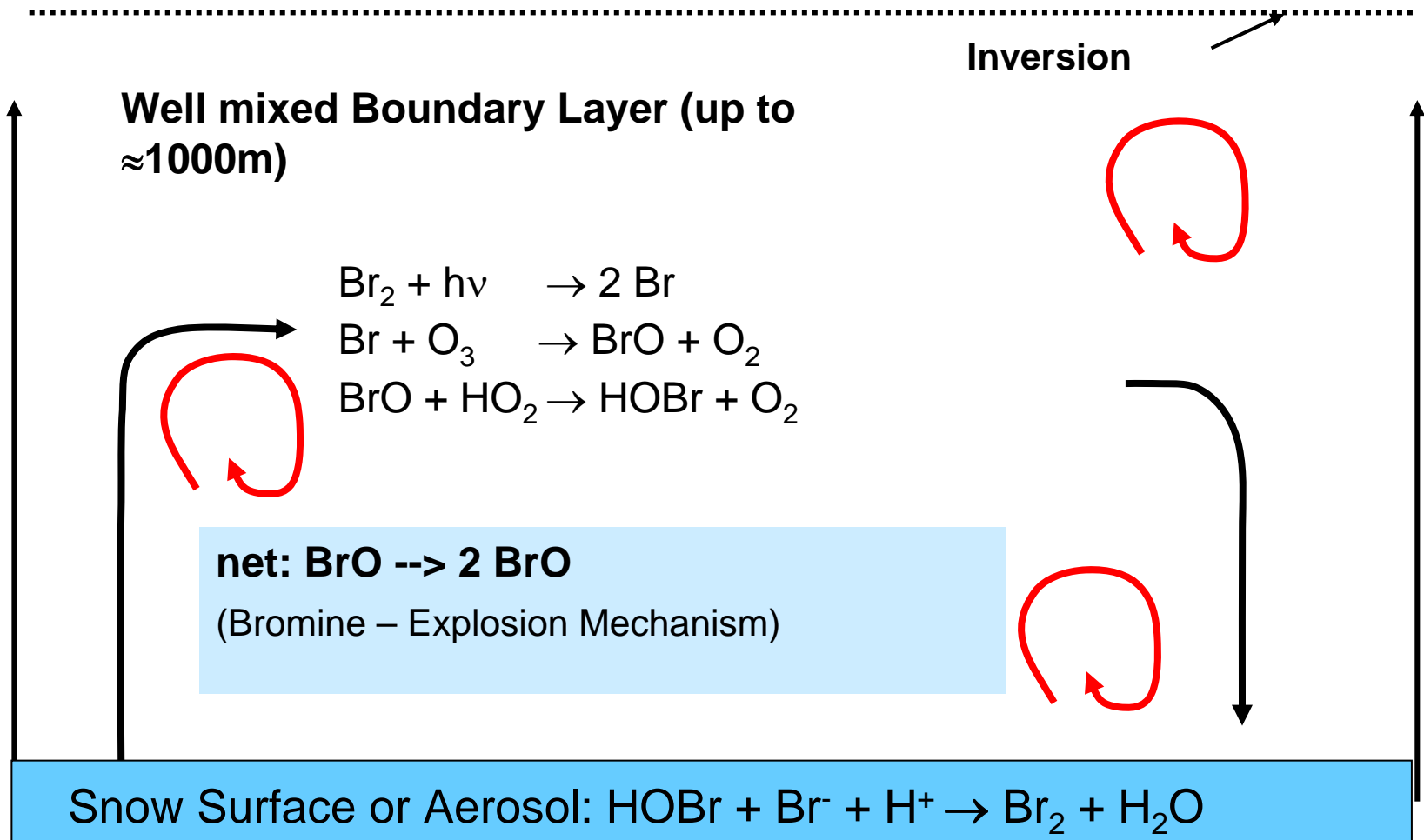
Regional extent



GOM
E BrO



PBL chemistry

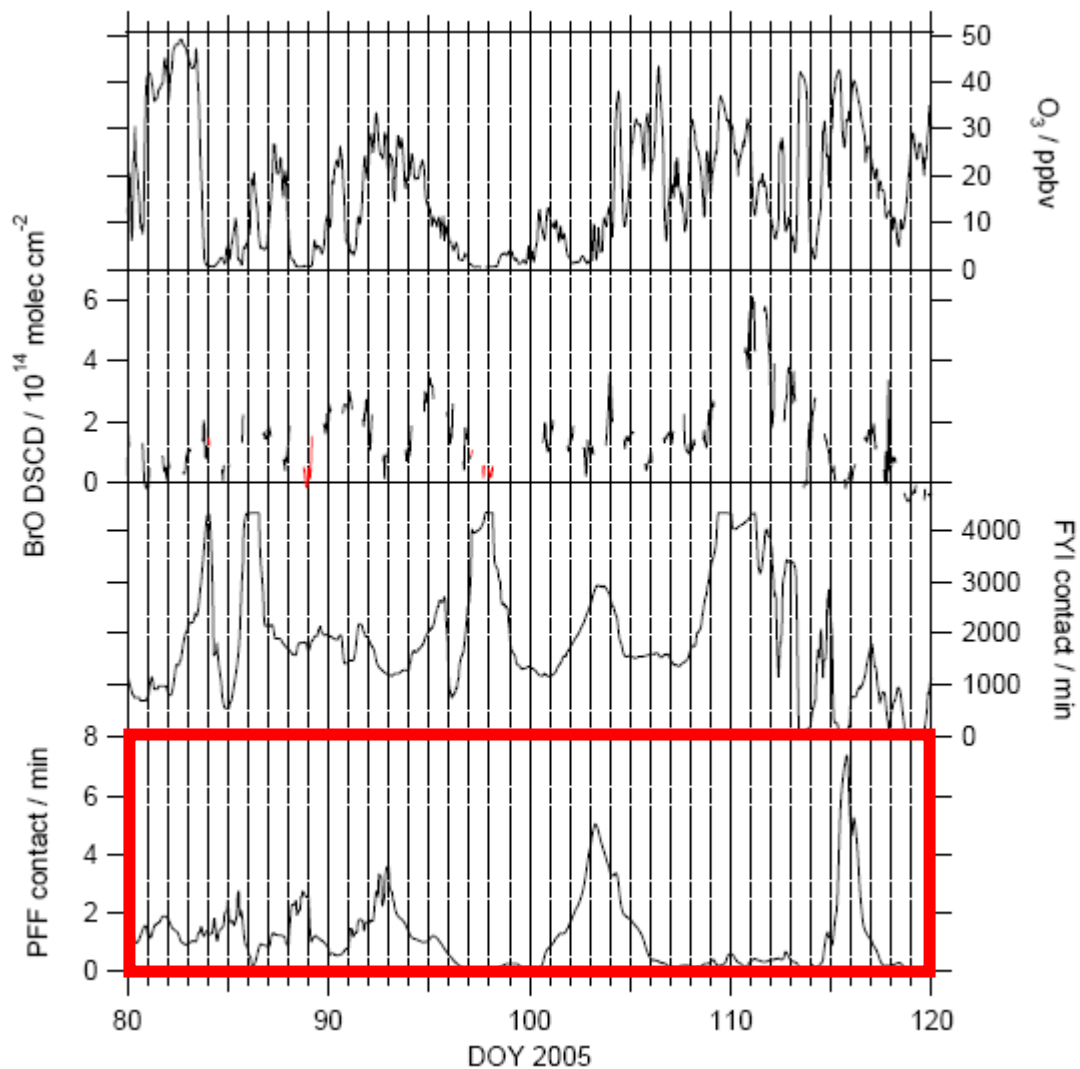


Interaction with the surface



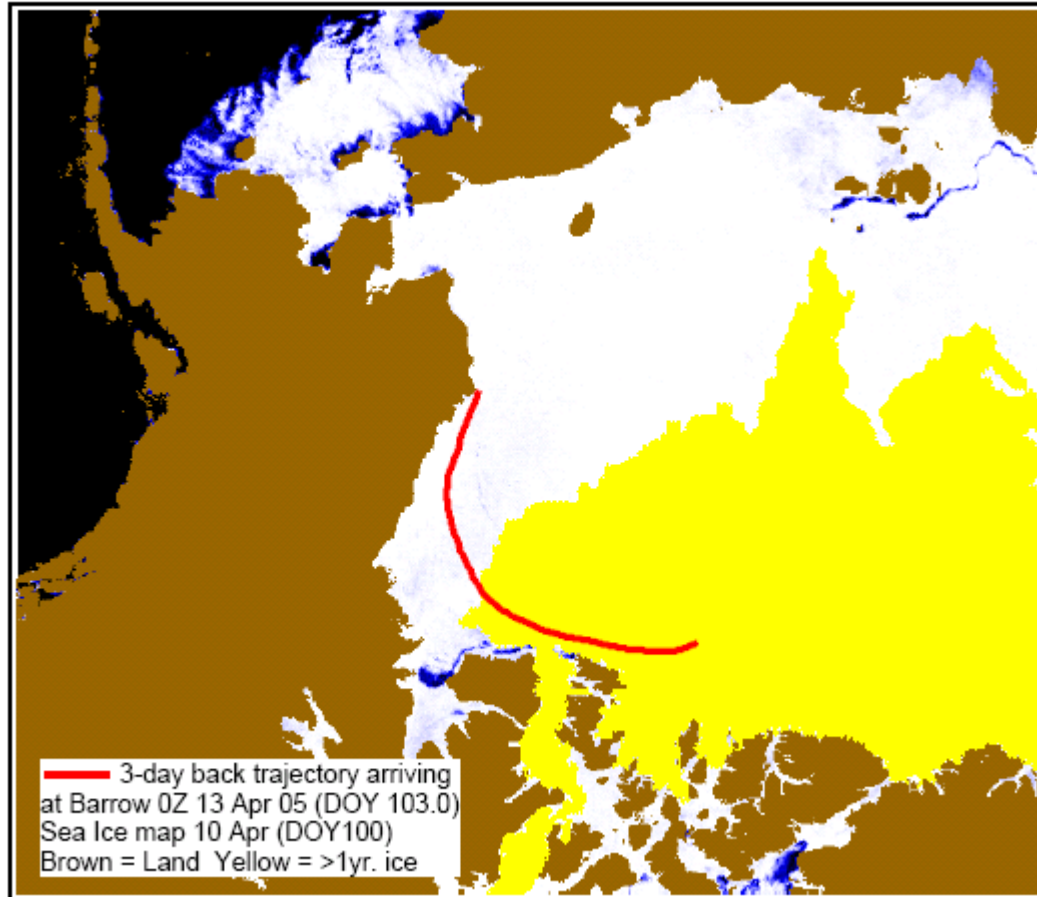
Frost
flowers

Link with frost flowers



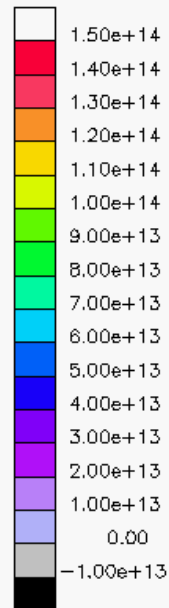
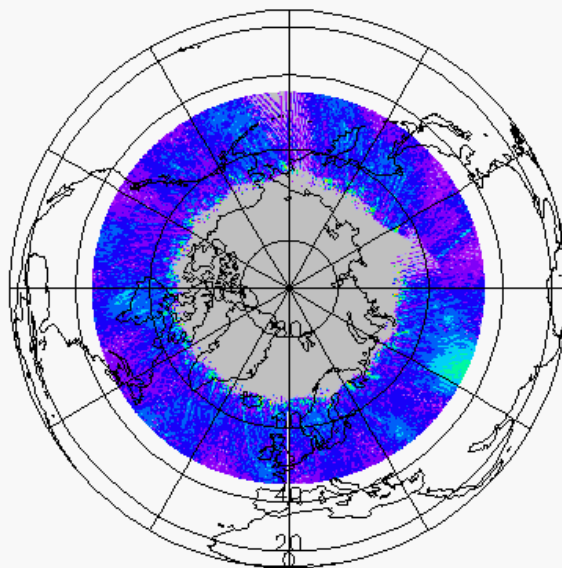
From Simpson et al., ACP, 2007

Link with first year sea-ice

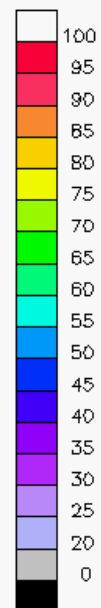
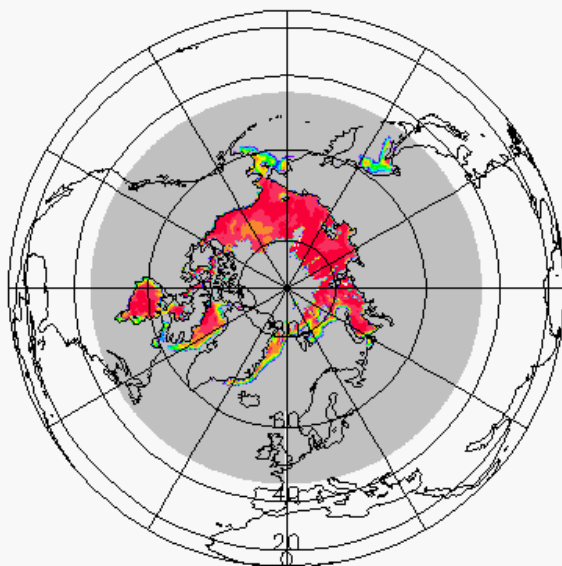


From Simpson et al., ACP, 2007

bro [mol/cm2], 01Jan2007 00:00

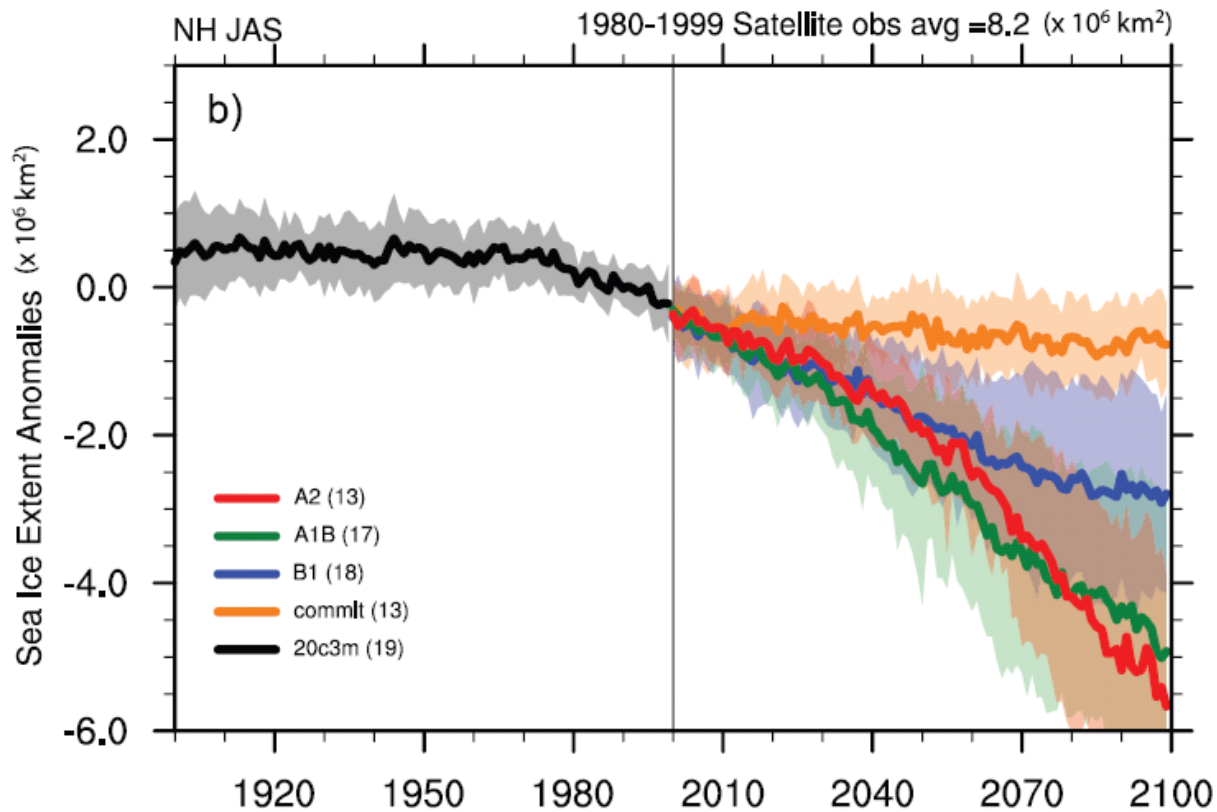


ice_fy [%], 01Jan2007 00:00

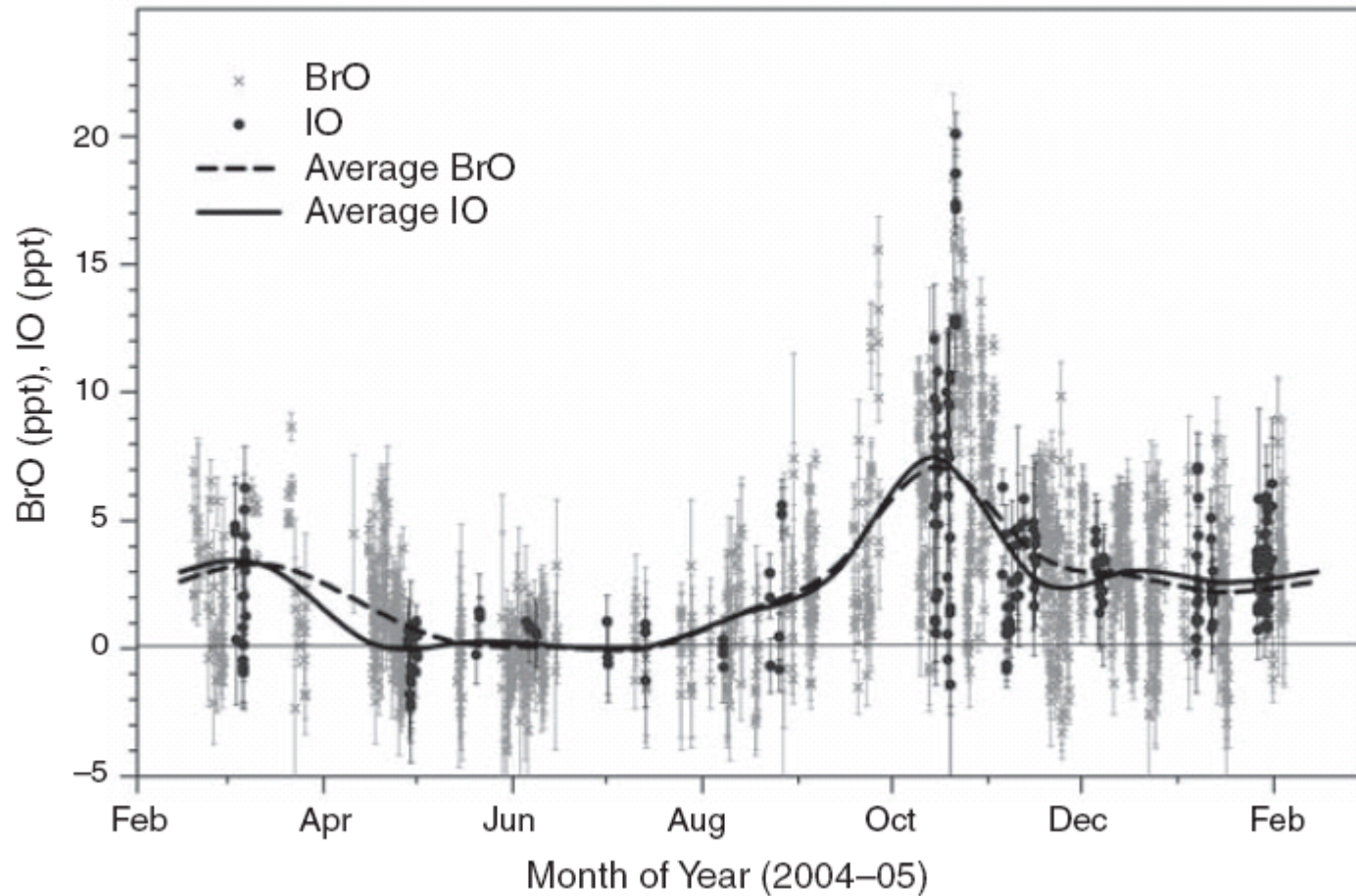


Future conditions

- More first-year sea ice in the future might mean more ozone depletion for a while

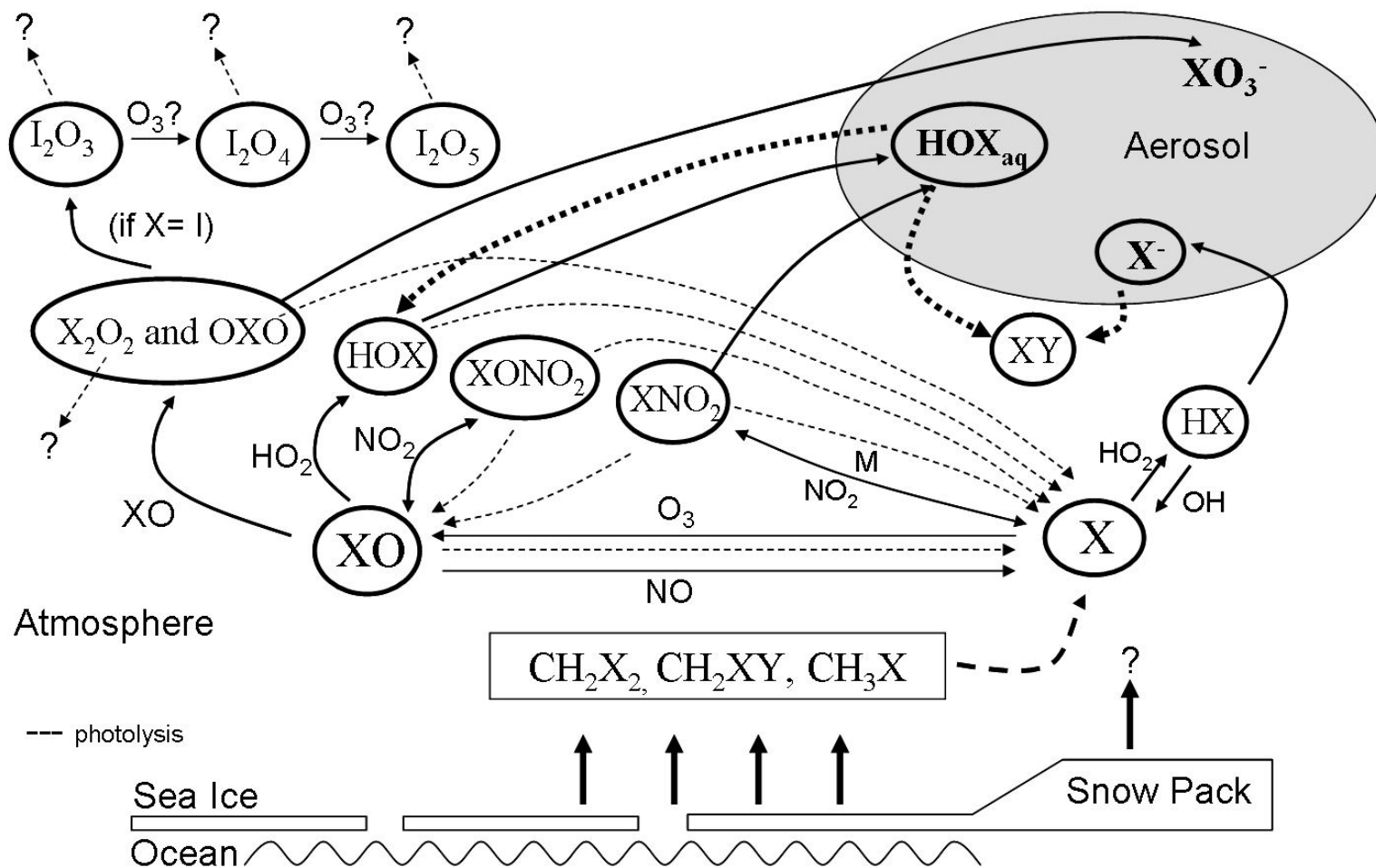


Iodine chemistry (Antarctica)



From A. Saiz-Lopez

Halogen chemistry summary



Deposition of black carbon

CB2 [mol/mol], 26Feb2006 00:00, ca. 804.13650 hPa

