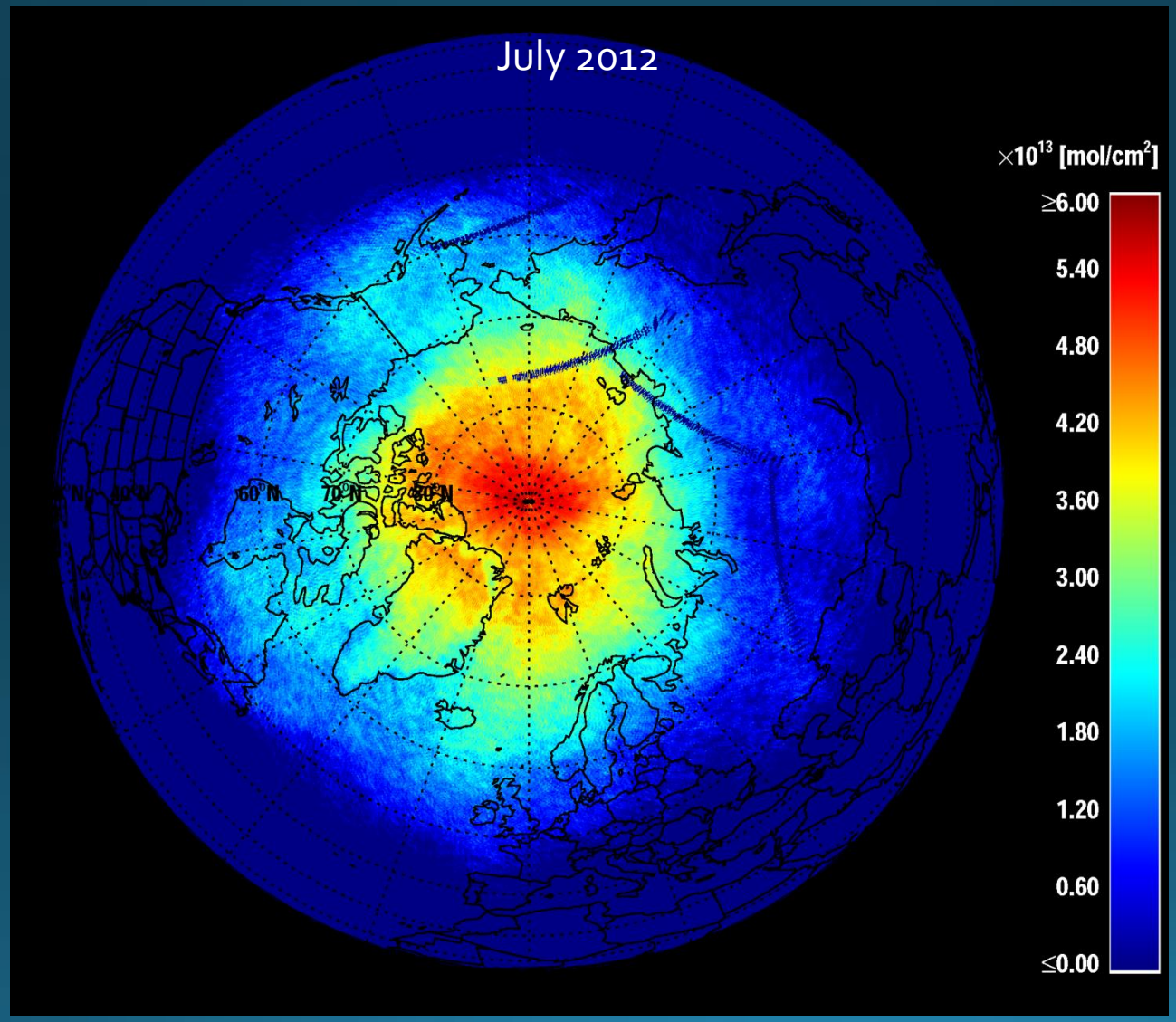
TORERO Science Team Meeting

Poster Session “Nuggets”

#1 Retrieval of Bromine monoxide using Ozone Mapping and Profiler Suite Total Column nadir instrument data; preliminary results



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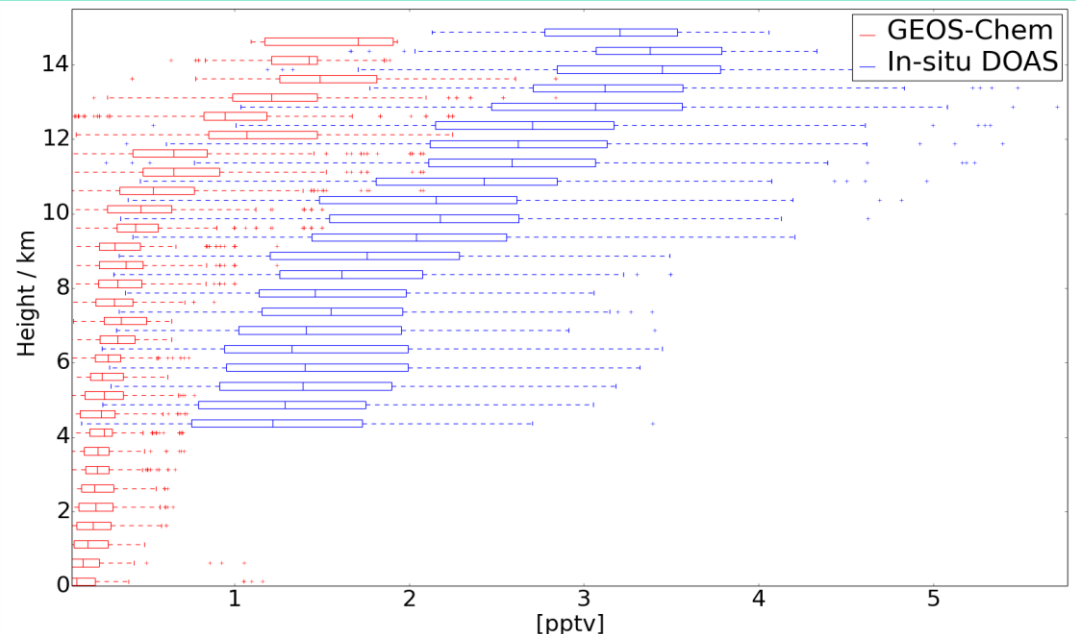
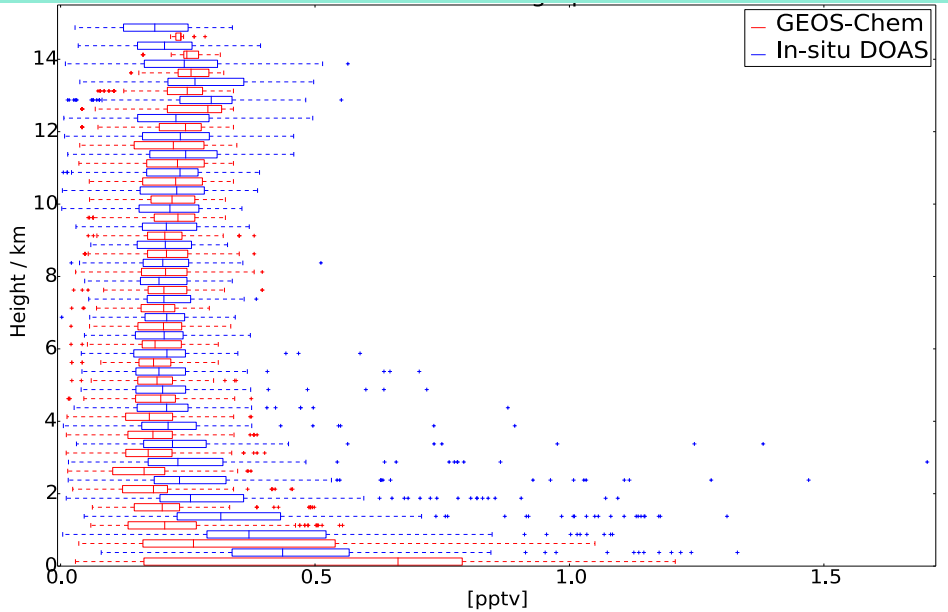
NATURAL ENVIRONMENT RESEARCH COUNCIL

#2 Modelling iodine chemistry

Tomás Sherwen*, Mat Evans, Lucy Carpenter

Wolfson Atmospheric Chemistry Laboratories





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#3 Controls on the Emission of Very Short-Lived Halogenated Gases from the East Tropical Pacific during the 2012 TORERO campaign

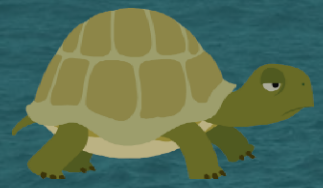
Stephen J. Andrews, Dene Bowdalo, Sina Hackenberg, Richard T. Lidster, Mat Evans, Lucy J. Carpenter

#4 Parameterization approach to convert AMAX-DOAS dSCDs into volume mixing ratios along TORERO flight tracks

Barbara Dix and Rainer Volkamer

University of Colorado Boulder

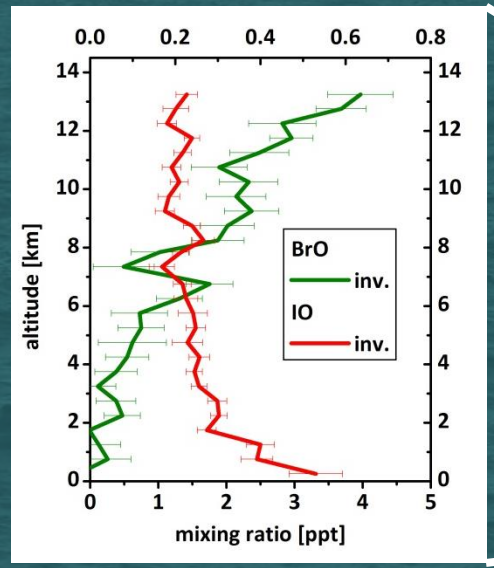
CIRES Cooperative Institute for Research in Environmental Sciences

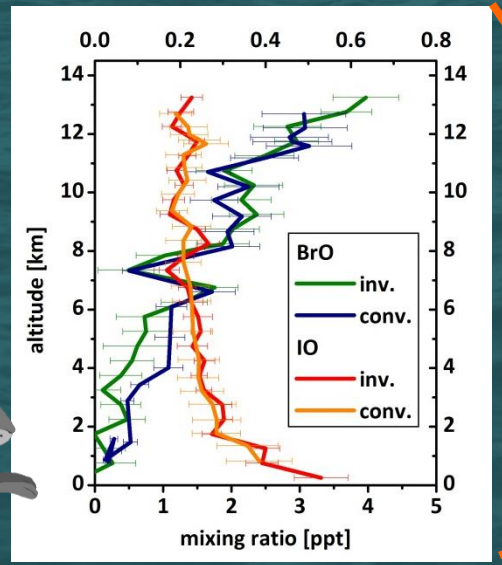


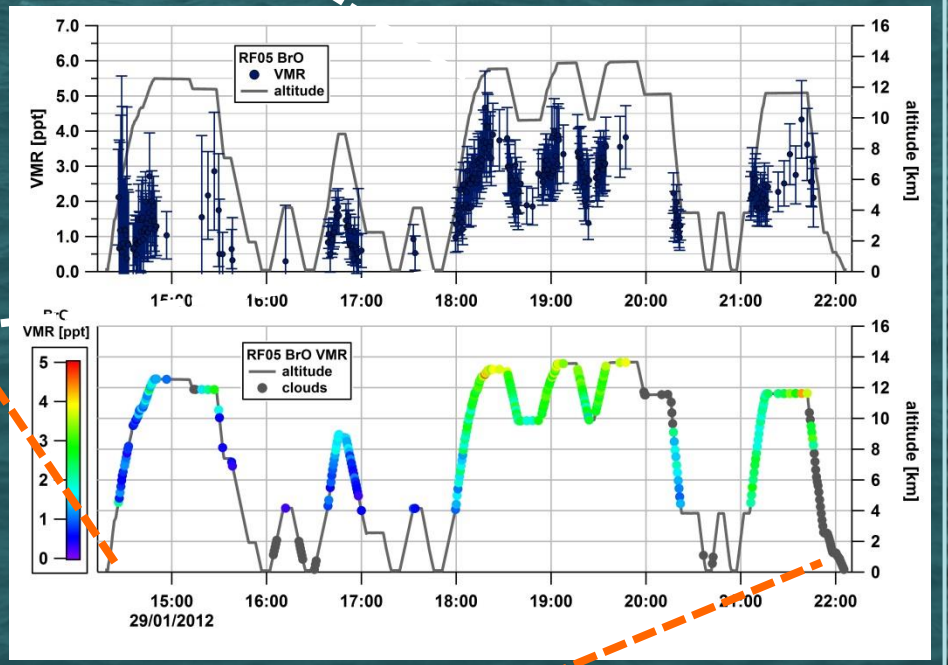
Inversion

DOAS dSCDs
~150 h

Parameterization



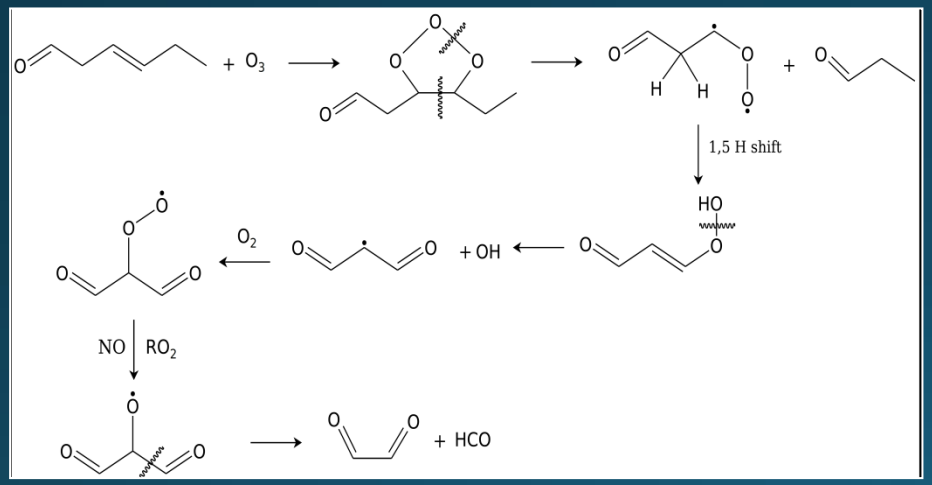




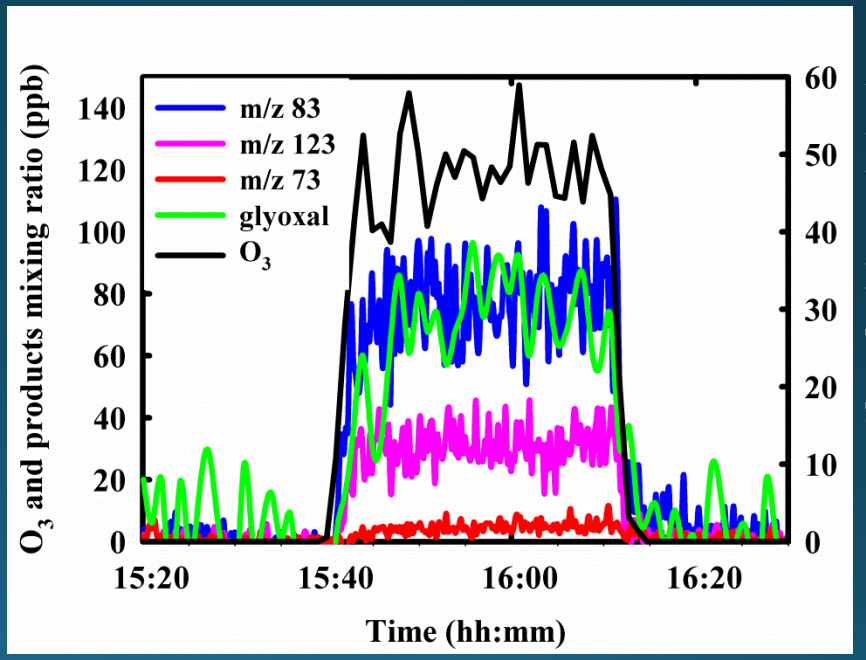
#5 Are PUFAs* a source of glyoxal in the MBL?

Heterogeneous reactions of gas-phase ozone and OH radicals with linoleic acid and nonenal. These results indicate a photochemical source of glyoxal in the marine boundary layer.

Laura Gonzalez, Shouming Zhou[1], Ryan Thalman, Jonathan Abbatt and Rainer Volkamer



The proposed mechanism of glyoxal formation from the ozonolysis of PUFA oxidation gas-phase products



1. Zhou, S., et al. Atmos. Chem. Phys. Discuss., 13, 17545-17583, 2013

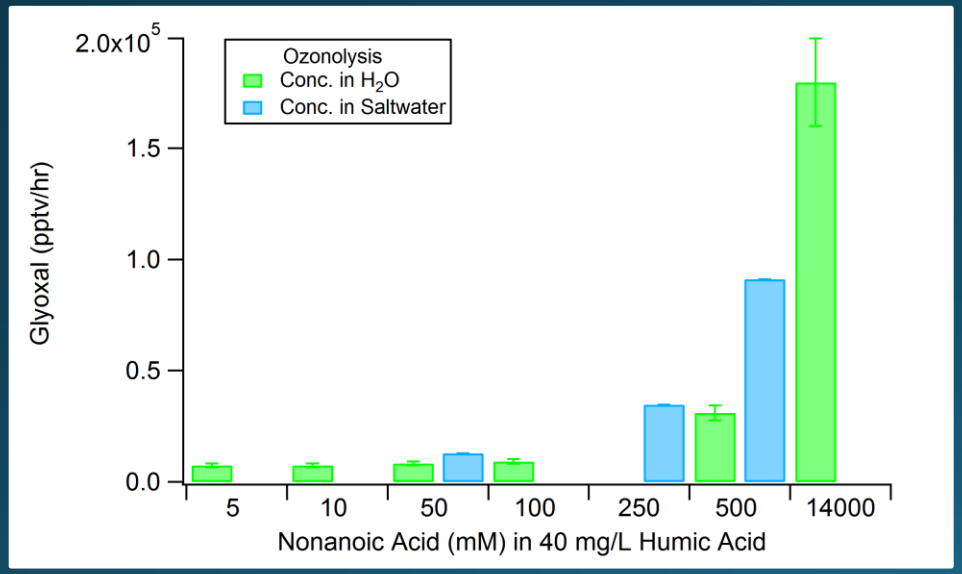
The gas-phase products, e.g. hexanal, 3-nonenal, MDA, and glyoxal, of the heterogeneous reaction between linoleic acid and ozone in a flow tube reactor.

* PUFAs – polyunsaturated fatty acids

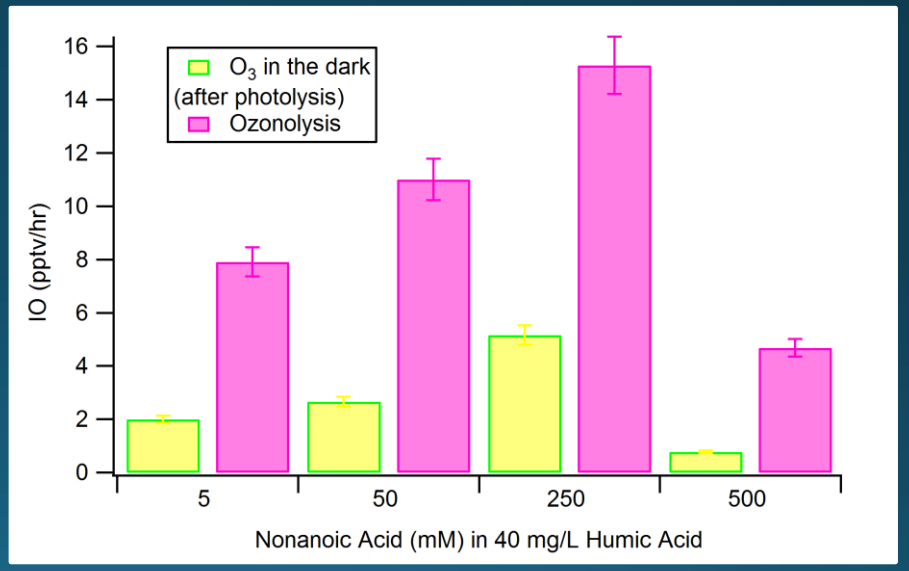
#6 Photochemical formation of alkenes and oxygenated VOCs at the air-water interface

Photochemistry of nonanoic acid in a humic acid aqueous solution and a further oxidation of primary products with gas-phase ozone.

Laura Gonzalez, Raluca Ciuraru, Francois Bernard, Christian George and Rainer Volkamer

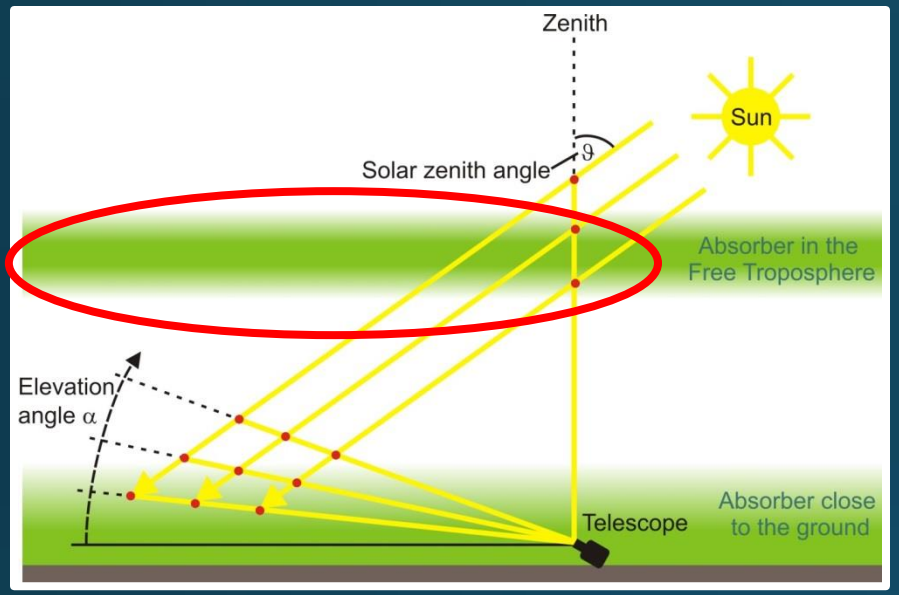


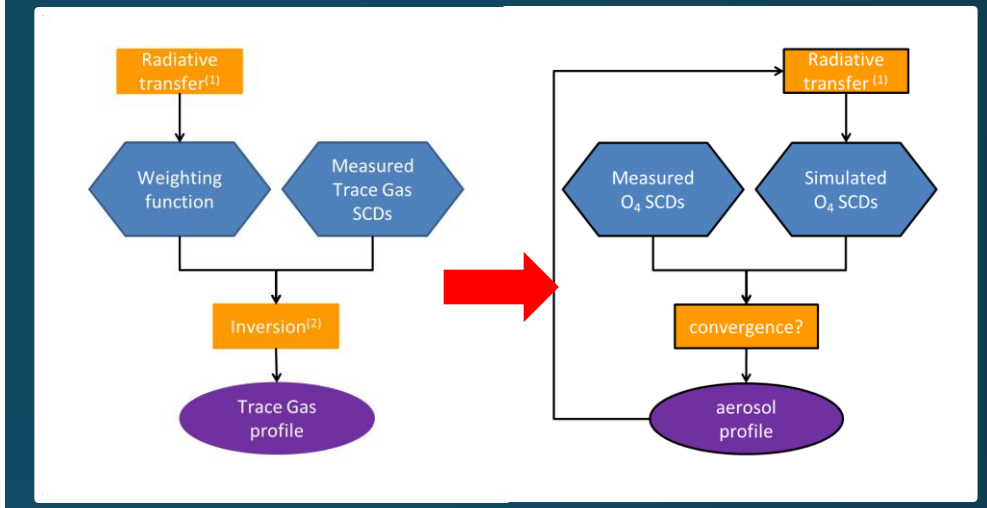
Glyoxal formation in water and saltwater solutions of humic acid. Saltwater enhances glyoxal production.



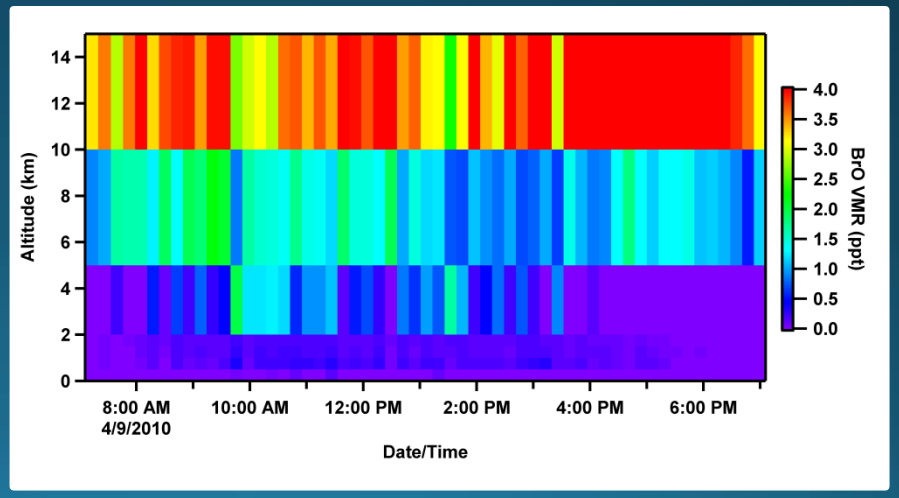
Photosensitizers, in this case humic acid, activates iodine which is later reacted with gas-phase ozone to produce IO.

#7 Ground-based retrieval of free tropospheric trace gases

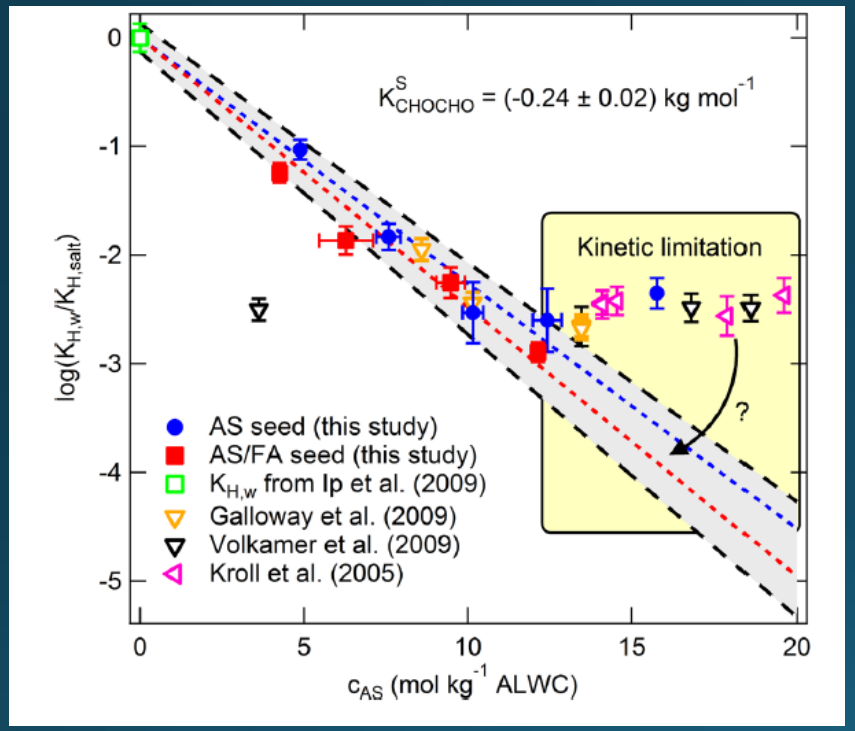


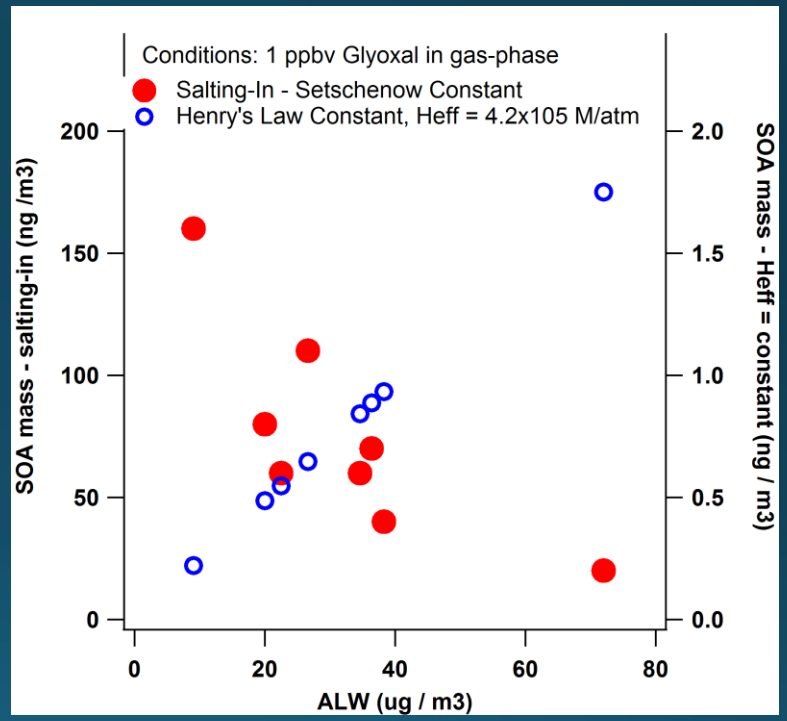


- MAX-DOAS: most sensitive to trace gas layers at instrument altitude, but can still get information about higher layers
- Optimized retrieval inversion
  - Maximize sensitivity towards free troposphere
- Free tropospheric VCD and profiles



Poster #8: Anthropogenic Triggers of Multiphase Glyoxal





Presence of salts in solution and "salting in" has a significant effect on glyoxal solubility.

Lunch Break

11:50-13:00