Atmos. Chem. Phys. Discuss., 9, C880–C881, 2009
www.atmos-chem-phys-discuss.net/9/C880/2009/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Photoinduced oxidation of sea salt halides by aromatic ketones: a source of halogenated radicals" *by* A. Jammoul et al.

Anonymous Referee #2

Received and published: 17 May 2009

This manuscript reports on the kinetics and mechanism of benzophenone triplet state reaction with halide anions in aqueous solutions suggesting that such photosensitized chemistry could be a source of halogen atom in the atmosphere. This work is consistent with the contention that the ocean's surface microlayer is rich in organics and probes the possibility that light initiated reactions at the sea-air interface could be significant. Previous results by these authors have shown that reactions of halide anions photosensitized by chlorophyll may lead to oxidation to atomic halogen. This manuscript presents new results using benzophenone as a model for aromatic carbonyl containing compounds. The experiments use laser flash photolysis together with GC detection of gas phase halogen species to obtain mechanistic and kinetic infor-

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

mation about this photochemistry. This work should be published as it contains new information of potential importance to chemistry in the marine boundary layer.

A few general questions should be considered by the authors but the answers are not necessary for the publication of the manuscript. 1) Can the trends observed with chloride (not strongly reactive), to bromide and iodide (very reactive) be used to comment on measurements in the environment? 2) Are there field observations to suggest that halogenated compounds participate in new particle formation? 3) What have these experiments to say, if anything, about the effect of the water-air interface?

This manuscript's readability would be greatly helped by responding to the specific comments of anonymous reviewer 1.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 7681, 2009.