

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

Anonymous Referee #1

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This manuscript focuses on an important photosensitized process that can potentially occur at the air-ocean surface and at the surfaces of sea-salt aerosols. The authors investigated excitation and quenching dynamics of the first excited triplet state of benzophenone (BP) in the presence of halogen ions. They reported new measurements of the quenching rate constants for halide ions. Their measurements suggest that free dihalogens such as BrCl can be produced by electron transfer from Br⁻ to 3BP, which is followed by well established chemistry of Br atoms in Cl⁻ containing aqueous solutions. The conclusions would have been stronger if it were possible to more quantitatively model the evolution of the gas phase species (BrCl) from irradiated solutions of BP/Br⁻/Cl⁻. But even without this kinetic modeling, the manuscript is interesting. I support the

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publication of this article once these corrections have been made.

In general the writing is well structured, but some sentences are not (see suggestions below). There are a number of typos in the text; the authors should have taken some pity on the reviewers and checked their manuscript more carefully before submitting it. I spent quite a bit of time identifying these typos and listing them below. Fixing them will greatly improve the clarity and readability of the manuscript.

Please see the attached supplement for the detailed comments.

Please also note the Supplement to this comment.

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