

## ***Interactive comment on “Different photolysis kinetics at the surface of frozen freshwater vs. frozen salt solutions” by T. F. Kahan et al.***

**T. F. Kahan et al.**

jdonalds@chem.utoronto.ca

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We wish to thank Anonymous Referee #2 for the careful reading of our paper. Several points for clarification were raised by the referee and we will address them all in the revised manuscript.

Several points are similar to those raised by Domine concerning the nature of the frozen solution (and the meaning of “bulk” ice in the context of reactions) and the role of non-equilibrium effects in establishing the quantitative description of the phases present. We have addressed those issues in our response to F. Domine. We will include a fuller description of the freezing rates used, and of the appearance of the frozen samples in the revised version.

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Concerning the effect of light scattering on photochemical kinetics in frozen solutions: We have addressed this at length in a recent paper (Kahan et al, 2010b) but will expand a bit on the discussion given on page 12068, around line 20, to emphasize that we expect the rates should be independent of light flux under our conditions.

Finally, we will add a citation to Dubowski and Hoffmann, as suggested by the referee.

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