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Atmospheric Chemistry and Physics Discussions

Interactive comment on "The time dependence of molecular iodine emission from *Laminaria digitata*" *by* S. Dixneuf et al.

Anonymous Referee #2

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This manuscript contains new and interesting data which shows that molecular iodine is released from the kelp Laminaria digitata in oscillatory bursts. The authors suggest that the time dependence of these bursts may be related to the release of H2O2 by the plant. The manuscript is generally well written and presented and the methodology seems sound. The production of new iodine aerosol is non-linearly dependent on precursor concentration, so information on the time and relative release of I2 in bursts is potentially highly relevant for atmospheric chemistry.

The manuscript has been somewhat revised following a previous submission, but many of my previous concerns remain, specifically that there is little in the way of quantitative information, i.e.:

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Interactive Discussion
Discussion Paper

1. What are the characteristic oscillatory time frequencies of the I2 release? Do these correspond with known frequencies of oscillatory behaviour of iodine dynamics? 2. What are the average enhancements of concentrations during a burst? 3. It seems from Fig 3A and 3B that two different experiments yielded completely different results on the oscillatory behaviour. Where any further experiments performed?; i.e. to judge which of these two (if any) were the most representative? 4. Finally, although it is suggested that the bursts may be related to H2O2 release, previous research (e.g. Kupper et al., 2002) shows only that H2O2 is released quickly and then decays: it does not show the oscillatory behaviour of I2 shown here. Is this due to a lack of temporal resolution in the latter data, or can the authors suggest another reason?

In summary, I think this manuscript is interesting enough to be published, but should include more quantitative information where possible.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 16501, 2008.

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Interactive Comment