

Interactive comment on “Measurements and modelling of molecular iodine emissions, transport and photodestruction in the coastal region around Roscoff” by R. J. Leigh et al.

Anonymous Referee #1

Received and published: 4 December 2009

General.

This is an interesting follow-on study of the 2006 RHaMBLe campaign in Roscoff, modelling some of the key results of the campaign. It is definitely within the scope of ACP, and the paper presents novel concepts, tools, ideas and data. The conclusions are substantial and warranted based on the data presented. Methods and assumptions are valid and clearly outlined; yet (not being from a modelling background myself!) it is hard to assess whether the results are indeed sufficient to support the interpretations and conclusions. In the same context, the description of experiments and calculations appears sufficiently complete and precise – but again, my own scientific background

C7917

is different that it is hard to objectively assess this point (i.e. I am unlikely to apply the methodology as it is presented here to reproduce any of the results). The title reflects the contents of the paper, and the abstract provides a concise and complete summary. The overall presentation is well structured.

The main weakness that I can see is the discussion of this study in a wider context – this relates to the Introduction, Discussion and Conclusions. The novelty of this work in relation to other, previous studies could be made much clearer, and this paper would gain a lot (i.e., it would become of interest for a wider audience) by placing this study in a wider interdisciplinary – in particular, biological / biochemical – context, and by discussing / citing appropriate, more interdisciplinary references. As it stands, this manuscript is directed towards a highly specialized readership.

A couple of minor corrections:

p. 21167, l. 3 – “Roscoff”, not “Rosccoff”

p. 21167, l. 11 – “night time”

p. 21167, l. 18 – “Total I₂ emissions. . .”

p. 21169, l. 18 – “which are distributed”

p. 21170, l. 3 – “was obtained”

p. 21170, l. 12 – “latissima”

p. 21170, l. 27 – “L. hyperborea”

p. 21171 / section 2.3 – Concentration footprints and flux footprints should be introduced at the beginning of this section

p. 21171, l. 5 – “applied”

p. 21178, l. 17 – write full word: “Laminaria”

p. 21188 – “Hyperborea”, “Digitata” and “Ochroleuca” should be lower case

C7918

Figs 5 & 6 – I am somewhat concerned about the size / readability / quality of these figures. The oscillating pattern of iodine emissions should be discussed in more detail in the text (even if the causality of this is plain obvious to the authors and to me); also considering the biological source of these emissions.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 21165, 2009.

C7919