

[Home](#)[Online Library ACP](#)[Recent Final Revised Papers](#)[Volumes and Issues](#)[Special Issues](#)[Library Search](#)[Title and Author Search](#)[Online Library ACPD](#)[Alerts & RSS Feeds](#)[General Information](#)[Submission](#)[Review](#)[Production](#)[Subscription](#)[Comment on a Paper](#)

Impact
Factor
4.865

ISI
indexed

[Volumes and Issues](#) [Contents of Issue 1](#)

Atmos. Chem. Phys., 1, 9-17, 2001

www.atmos-chem-phys.net/1/9/2001/

© Author(s) 2001. This work is licensed under a Creative Commons License.

Coastal zone production of IO precursors: a 2-dimensional study

L. J. Carpenter¹, K. Hebestreit², U. Platt², and P. S. Liss³¹Department of Chemistry, University of York, York, YO10 5DD, UK²Institut für Umweltphysik, University of Heidelberg, INF 229, D-69120 Heidelberg, Germany³School of Environmental Sciences, University of East Anglia, Norwich, NR4 7TJ, UK

Abstract. At Mace Head, Eire, in the coastal East Atlantic, diiodomethane has been identified as an important precursor of iodine oxide radicals. Peak concentrations of both CH₂I₂ and IO at low water indicate that the intertidal region is a strong source of organo-iodines. Atmospheric measurements of CH₂I₂ made in marine air are compared with the concentrations predicted by a 2-dimensional model incorporating horizontal and vertical dispersion of surface emissions. The model shows that micrometeorological variability, proximity of the site to emissions, and photolysis all play important roles in determining the CH₂I₂ concentrations at Mace Head. In addition to a tidal-height dependent intertidal flux, which was estimated from seaweed production data, a contribution from offshore (non-local) sources was required in order to reproduce the strong signature of photolysis in the CH₂I₂ observations. A combination of an offshore flux and an intertidal flux (of up to 1.4×10^9 molecules cm⁻²s⁻¹ at low water) results in good agreement between the measured and modelled CH₂I₂ concentrations. Although this study does not necessarily infer emission of CH₂I₂ from the open ocean, it suggests that air-sea exchange of CH₂I₂ in coastal waters does occur.

[Final Revised Paper](#) (PDF, 242 KB) [Discussion Paper](#) (ACPD)

Citation: Carpenter, L. J., Hebestreit, K., Platt, U., and Liss, P. S.: Coastal zone production of IO precursors: a 2-dimensional study, Atmos. Chem. Phys., 1, 9-17, 2001. [Bibtex](#) [EndNote](#) [Reference Manager](#)

[Search ACP](#)

Library Search

Author Search

[News](#)

- [Sister Journals AMT & GMD](#)
- [Financial Support for Authors](#)
- [Journal Impact Factor](#)
- [Public Relations & Background Information](#)

[Recent Papers](#)

01 | ACPD, 12 Mar 2009: A new insight on tropospheric methane in the Tropics – first year from IASI hyperspectral infrared observations

02 | ACPD, 11 Mar 2009: Comparison of analytical methods for HULIS measurements in atmospheric particles

03 | ACPD, 11 Mar 2009: Vertical distribution of aerosols in Mexico City during MILAGRO-2006 campaign