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# Release of $I_2$ by *Laminaria digitata* in chamber experiments

D.S. Venables (1), E.R. Ashu-Ayem (1), U. Nitschke (2), C. Monahan (3), J. Chen (1), S.B. Darby (1), P.D. Smith (1), C.D. O'Dowd (3), and D.B. Stengel (2)

(1) Department of Chemistry and Environmental Research Institute, University College Cork, Cork, Ireland (d.venables@ucc.ie), (2) Botany and Plant Science, School of Natural Sciences and Ryan Institute for Environmental, Marine and Energy Research, National University of Ireland Galway, Galway, Ireland, (3) School of Physics and Ryan Institute for Environmental, Marine and Energy Research, National University of Ireland, Galway, Galway, Ireland (colin.odowd@nuigalway.ie)

Current emission rates of $I_2$ from tidally-exposed macroalgae are poorly constrained and reported emission rates vary by three orders of magnitude. Here we quantify $I_2$ emissions from 25 *Laminaria digitata* (Phaeophyceae) samples investigated in a simulation chamber using a broadband cavity-enhanced absorption spectrometer. The chamber design allowed for gradual extraction of the seawater during experiments to simulate tidal emersion. Samples were exposed to air with or without ozone and to varying irradiances. Molecular iodine emission occurred in four distinct stages: moderate emissions from partially submerged samples (stage one), followed by a strong release by fully emerged samples (stage two) and slowing or stopping of $I_2$ release (stage three). In some samples, later pulses of $I_2$ were evident (stage four). Emission rates ranged from 7 to 616 pmol $min^{-1}$ $gFW^{-1}$ (FW: fresh weight) in ozone-free air, with a median value of 55 pmol $min^{-1}$ $gFW^{-1}$ for 20 samples. Our relatively large dataset provides strong evidence that $I_2$ emission rates between alga are highly variable, an observation that explains the wide range of previously reported emission rates.