



a experimental study of volatile halocarbon production in seawater

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Methyl iodide (CH_3I) and other volatile iodocarbons are major carriers of iodine from the ocean to the atmosphere. A set of incubation experiments was designed to identify and quantify the source of methyl iodide in the marine environment.

“Whole-bottle”(quartz-flask) incubation experiments were conducted to examine production of methyl iodide as well as other halogenated compounds (CFC-11, chloroform, dibromomethane, chloriodomethane, dibrom-chloromethane and bromoform). The experiments involved long-term incubations (60 hours) of natural seawater samples under natural light conditions, that had been subject to various treatments (e.g. pre-purged with synthetic air, filtered).

Significant variability was observed only for methyl iodide and another substance that has not yet been identified. Light intensity had a significant impact on methyl iodide production, with higher concentrations observed in the samples exposed to light. A clear diurnal variation was observed in these “light” samples. No significant difference was observed between the filtered and non-filtered samples. The concentration and the diurnal variability of methyl iodide was larger during the summer months than in winter.

Implications of these experimental results, and plans for future experiments, will be presented.