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Speciation of soluble aerosol iodine over the Atlantic Ocean

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The speciation of iodine in aerosol is significant because some species (e.g. iodate, IO_3^-) are thought to be inert, while others (iodide, I^- and hypoiodous acid, HOI) are potentially reactive and may promote transfer of reactive halogens to the gas phase. Direct observations of this speciation in marine aerosol are scarce. Previous modelling studies have considered only inorganic iodine species and have concluded that only iodate reaches significant concentrations in MBL aerosol. I report results from two research cruises in the Atlantic Ocean, covering wide longitude (60˚W to 0˚W) and latitude (50˚N to 50˚S) ranges. These indicate that iodide and (as yet unidentified) organic iodine species are both widespread and abundant in marine aerosol. This paper will discuss the potential influences on inorganic iodine speciation and the possible interactions between organic and inorganic iodine species.