



## **New particle formation events on Appledore Island?**

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During the recent years, it has been observed that in the coastal marine boundary layer events of massive new particle formation can take place, which seem to be correlated with low tide and the presence of sunlight. There is some evidence that these events may be connected with the release of alkyl iodides by marine algae during low tide. Some of these organoiodine compounds photolyse quickly, forming I radicals which can be chemically transformed into various inorganic iodine-species, part of which may contribute to the observed new particle bursts.

As part of the ICARTT campaign in summer 2004, measurements were performed on Appledore Island (USA), about 10 km off the New England coast. One of the goals of the measurements on this special site was to investigate the role of halogens (especially iodine) in the production and chemical evolution of aerosols over the Gulf of Maine.

Focusing on this aspect, we performed some sensitivity model studies for Appledore conditions using the one-dimensional model MISTRA-MPIC, which includes detailed chemistry in the gas and aqueous (aerosol) phase as well as aerosol microphysics. MISTRA has already been used for investigating different aspects of the role of halogens for the chemistry of the marine boundary layer. Besides chlorine and bromine chemistry, the model contains a detailed iodine reaction scheme and has been extended by a nucleation parameterization which connects the "real" nucleation rate of thermodynamically stable clusters with an "apparent" nucleation rate in the model's lowest size bin.