The Chinese University of Hong Kong
Earth System Science Programme

Iodine in the Troposphere

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Abstract

Iodine has been known to potentially play a role in the chemistry of the atmosphere since the 1960s. However, it impact up to this point has not considered significant enough to merit inclusion in climate or transport models of the troposphere. We have recently shown laboratory evidence that there is a large new source of atmospheric iodine from reactions occurring at the ocean surface. We include these reactions and full treatment of other iodine emissions, chemistry and deposition into a global tropospheric chemistry transport model (GEOS-Chem). This can have large impacts on the composition of the atmosphere, notably reducing the concentration of ozone. We then explore some other aspects of iodine chemistry such as its impacts on aerosols. In general we find that Iodine in the atmosphere has a rich chemistry with the potential for significant affects on the global scale but due to a lack of observations and laboratory studies there are significant uncertainties in these impacts.

~ All are Welcome! ~

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