



## **First Results from Long Term Measurements of OH, H<sub>2</sub>SO<sub>4</sub> and MSA on the West Coast of Ireland**

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The Mace Head Atmospheric Research station on the west coast of Ireland offers westerly exposure to the North Atlantic Ocean and the opportunity to study atmospheric composition under Northern Hemispheric marine background conditions as well as advection from European continental emissions. We present first measurements of atmospheric OH, in combination with gaseous sulfuric (H<sub>2</sub>SO<sub>4</sub>) and methanesulfonic acid (MSA) carried out at Mace Head since May 2010 by using Selected-Ion Chemical Ionization Mass Spectrometry (SICIMS). Data analysis is supported by a broad suite of concurrent meteorological, gas phase (e.g., methane, ozone, nitrogen oxides, carbon monoxide, photolysis frequencies of ozone and nitrogen dioxide) and aerosol parameters (e.g., aerosol composition by high resolution aerosol mass spectrometry). Diurnal and seasonal variability of OH in coastal marine and continental air will be discussed in comparison with results reported from previous short-term studies. In particular, distinct correlations were observed between daytime levels of OH and the ozone photolysis frequency, J(O<sub>1</sub>D). Furthermore, our measurements suggest the presence of a major daytime oxidant in the marine coastal atmosphere in addition to OH. Efforts to identify the chemical nature of this unknown oxidant and its occurrence in relation to processes such as tidal cycles are in progress.