

5th February 2015 - 10:00
Building 99, Seminar Room I+II (EG)

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**Isotope Selective Cavity-Ringdown and Surface Sensitive
Sum-Frequency Generation
Spectroscopy for Environmental Water-Air Interface Studies**

Modern laser techniques such as vibrational sum-frequency generation (VSFG) spectroscopy for surface analysis and cavity-ringdown spectroscopy (CRDS) for ultrasensitive trace gas detection offer unique insights into environmentally relevant processes at water-air interfaces. The talk highlights the capabilities of VSFG and CRDS to study the composition and structure of the marine nanolayer (i.e., a complex layer of organics regularly found at the water-air interface of natural water samples), to elucidate structure-reactivity trends of heterogeneous ozone oxidation of unsaturated fatty acids, and to perform continuous field-measurements of the isotopic composition of CO_2 dissolved in surface ocean water. The presented data allow us to draw conclusions regarding air-sea gas exchange and about the composition and reactivity of sea-borne aerosols – hence contributing to a better understanding of ocean-atmosphere coupling.

