STUDY OF AIR-LIQUID INTERFACES USING SUM-FREQUENCY GENERATION SPECTROSCOPY: APPLICATIONS TO ATMOSPHERIC AEROSOLS

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The air-liquid interface of proxies for organic aerosols is investigated using broad bandwidth sum frequency generation (BBSFG) spectroscopy. The orientation of the fatty acid molecules was elucidated at the interface of a monolayer of oleic acid in water as well as in the pure liquid. This study is a prerequisite to the investigation of the heterogeneous reaction of ozone, a powerful atmospheric oxidant, with aerosols containing oleic acid. This reaction has not been directly investigated at the air-liquid interface and is of great interest in the context of the chemical transformation of aerosols containing organic molecules.