

## **Study of the photoreactivity of individual water-droplets containing dicarboxylic acids of atmospheric interest**

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Dicarboxylic acids (DAs) are among the most abundant water-soluble organic aerosols in the atmosphere. They are directly emitted into the atmosphere from incomplete combustion of fossil fuels and biomass burning, although their main production is arising by secondary processes of anthropogenic and biogenic volatile organic compounds (VOCs). During their transport into the atmosphere DAs are subjected to photochemical processes, including oxidation and bond-breakings. However, most of the studies dealing with the photochemistry of dissolved DAs published so far have been performed in bulk conditions[1-3], thus neglecting the reactivity effects that the surface of the individual aerosols can cause in these multiphase systems.

In this work, we study the photoreactivity of single droplets containing most common DAs in aerosols, in presence of other photochemically active species. The influence of the photochemical products on the hygroscopic properties will be also evaluated. We have use an environmental acoustic levitation cell coupled to the  $\mu$ -Raman spectroscopy to monitor the physical and chemical processes occurring in particles without the influence of a contacting surface.

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