Contribution ID: **272** Type: **Poster**

【223】Stable Carbon Dioxide Anion Radical in Salt Clusters

Wednesday 23 August 2017 12:32 (1 minute)

As sodium chloride is the main component of marine aerosols, the present study shows experimental investigations with theoretical support on the photodissociation cross section of sodium chloride clusters doped with glyoxylate ($[Na_nCl_{n-2}(C_2HO_3)]^+$, n = 5-11). It was found that that the glyoxylate can be photolyzed into HCO and a carbon dioxide radical anion, which is known to be metastable in the gas phase. The salt environment, however, stabilizes the radical anion. Importantly, this fragmentation happens not only in the deeper UV, but also in the wavelength range from 300-400 nm, which is relevant for tropospheric chemical reactions.

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Session Classification: Poster Session

Track Classification: Applied Physics and Plasma Physics