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Spectroscopic Probes of Molecular and Cluster Ions

Organisation: I. Fischer

Abstract:

Spectroscopy of mass selected ions provides important insight into many molecular processes. Two such studies will be presented in this lecture. In the first part, we use infrared studies of cluster ions to gain some insight into the interaction of water with anionic charge distributions. I will present data on the microsolvation of anionic sulfur hexafluoride, which sheds light on the reactivity of this anion in atmospheric processes. In addition data on the interaction of hydrated naphthalene anions with a small number of water molecules will be shown. The second topic concerns photodissociation spectroscopy of tetrachloroaurate in the gas phase. This gold complex ion is used in most approaches that aim to produce gold nanoparticles. Our gas phase results test current condensed-phase photochemistry models for the photoreduction of this important gold salt.