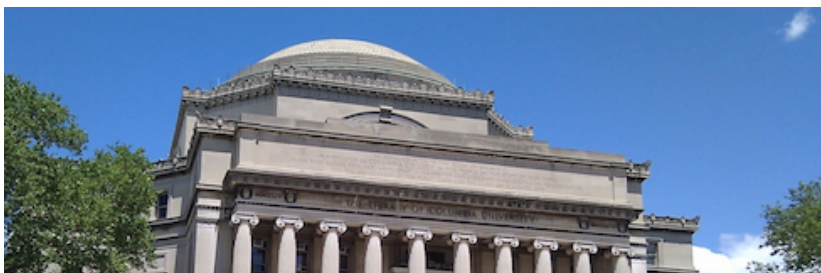


Third workshop on Air-Ice Chemical Interactions (AICI)



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Can detailed oxidation kinetics indicate where reactivity occurs in ice?

Tuesday, 7 June 2011 10:20 (20 minutes)

One of the significant challenges to the ice chemistry community is to identify the medium in which reactive chemistry occurs, ie. on a QLL surface, in an associated brine, or in the bulk ice, and how fast it occurs in each medium. This talk will present the results from two reactive systems which help to identify the location of the reactive chemistry. In particular, detailed kinetics will be presented for: i) the heterogeneous oxidation of bromide by gas-phase ozone in both liquid and frozen salt solutions, and ii) the oxidation of succinic acid in liquid and frozen solutions, by photolytically generated hydroxyl radicals. In the case of ozone/bromide, the kinetics indicate that both a surface and bulk phase reaction occur simultaneously with kinetics very similar between the frozen and liquid solutions. This suggests that brine chemistry is dominant. For the case of succinic acid, the unfrozen solution kinetics are substantially faster than for the frozen solutions, suggesting that the reactants are physically separated in the ice.

Please list some keywords

halogen oxidation ice

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