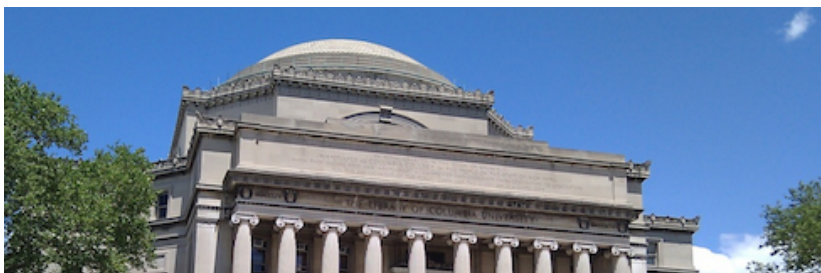


Third workshop on Air-Ice Chemical Interactions (AICI)



Contribution ID: 14

Type: **Poster**

Photochemistry of Model Organic Matter in Ice

Monday, 6 June 2011 12:05 (1h 10m)

The organic matter present in ice and snow is composed of humic-like substances and the transported degradation products of anthropogenic and biogenic emissions. Our research explores the direct photochemistry and thermal reactions of model organic matter in ice and water. Pyruvic (PA) and benzoylformic acids (BA) are used as surrogates for the species present in the polar environment. Several experimental techniques are used to propose and contrast a reaction mechanism: TOC, and EPR, NMR, UV, FTIR, and fluorescence spectroscopies. Control dark experiments confirm that PA and BA are thermally stable below $-5\text{ }^{\circ}\text{C}$. LC-ESI-MS detection and 2H - and 13C -isotope labeling experiments were used to identify oligomeric products. Our results support the facts that simple dicarbonyls can undergo photochemical reactions in ice to produce carbon dioxide and regenerate polyfunctional products.

Please list some keywords

dicarbonyl; hydration equilibrium; ice, snow, ketocarboxylic acid, oligomer,

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