Physical Chemistry Seminar

Tuesday, September 28, 2010 | **11:00 a.m.** | **Room 1315 Chemistry Building**

From Ozonolysis to Organic Aerosol: Connecting Microcanonical Kinetics to Global Haze

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Ozonolysis is a fundamental oxidation process of substantial atmospheric import. Because many biogenic emissions consist of unsaturated terpenoid molecules, terpene ozonolysis controls the fate of many organics in the atmosphere. Many terpene ozonolysis products are substantially less volatile than the parent terpene, and some have sufficiently low volatility to remain in the condensed phase under atmospheric conditions. The specific ozonolysis chemistry is, however, quite sensitive to fundamental details such as the degree of collisional stabilization at atmospheric pressure along the very complex reaction coordinate describing ozonolysis. The progressive oxidation of these and other organic compounds drives the overall levels and physical properties of atmospheric organic aerosol, even as the chemical complexity of the system expands to staggering proportions. Fortunately, relatively simple mean-field thermodynamic relations can describe the phase partitioning of organics in the complex solvent we call organic aerosol. We shall explore, through experimental results and theoretical considerations, the connections in this multifaceted problem.

Refreshments will be available prior to the seminar at 10:45 a.m. outside room 1315

Graduate Students and Post Docs may meet with the speaker at 1:00 p.m. in Room 8335