

Modeling SOA formation and aging from the multigenerational oxidation of Intermediate Volatility Organic Compounds

Bernard Aumont

University of Paris, Creteil, France

Monday, August 27th, 2012

3:00 p.m. – Refreshments & Socializing

3:30 p.m. – Seminar

Foothills Lab 2, Room 1001

Abstract

Secondary Organic Aerosols (SOA) are formed by condensation of multifunctional species produced during gaseous oxidation of Volatile Organic Compounds (VOC). The Generator for Explicit Chemistry and Kinetics of Organics in the Atmosphere (GECKO-A) has been developed to describe highly detailed gas phase oxidation schemes for organic compounds under general tropospheric conditions and the partitioning of secondary organics between gas and condensed phases. This approach leads to the development of chemical schemes involving millions of species and allows the prediction of multiphase mass budgets using first principles. GECKO-A was applied to generate highly detailed oxidation schemes for C8-C24 alkanes and explore SOA formation in a box model. The contribution of multi-generational oxidation process to SOA formation and ageing was examined in detail. Results will be presented showing, generation after generation, the time evolution of the volatility distribution and the oxidation degree of the organic species in the gas and aerosol phases for various hydrocarbons. Branching effect of the carbon backbone on SOA yields and oxidation states will be examined.

**Please contact Trinh Guenther at x-1401 if you have questions about this seminar.