MAR08-2007-000079

Abstract for an Invited Paper
for the MAR08 Meeting of
the American Physical Society

Chemistry of Individual Atmospheric Particles

ALEXANDER LASKIN, PNNL

Aerosols are widely recognized as key elements in atmospheric environment. Chemical and morphological data of individual particles are of crucial importance for understanding of their formation, reactions, atmospheric history and aging. Microprobe analytical techniques have been extensively used in the past to characterize the size, morphology, phase and composition of particles collected in field and laboratory studies. These technique coupled with an appropriate time-resolved aerosol sampling are capable of generating time-resolved single-particle data, which then can be used to follow in detail the time evolution of specific types of aerosols. In this presentation we give a summary of recent research projects carried out in our laboratory that demonstrates how the use of complementary microprobe methods provides new insights into the atmospheric reactions of aerosols, their physical and chemical transformations, and in particular how the obtained data can be utilized to define future directions in laboratory and field studies of aerosols.