

### ***Aerosols, Atmospheric Chemistry and Climate***

The National Oceanic and Atmospheric Administration (NOAA), the California Air Resources Board (CARB), and the California Energy Commission (CEC) have planned a joint field study of atmospheric processes over California and the eastern Pacific coastal region in 2010. Referred to as “CalNex” (for “California Nexus”), this study will emphasize the interaction between air quality and climate change issues. This multi-agency study will bring together specialized, complementary resources such that the outcome will be able to answer important scientific questions that have an impact on environmental policy, e.g., evaluating policies that are “win-win” for both air quality and climate change. See <http://www.esrl.noaa.gov/csd/calnex/> for more information on the field study.

*In FY2011, ESS invites proposals that focus on analysis of field measurement data from the CalNex study and modeling projects that seek to utilize data from the study for the purposes of understanding the role of aerosols and chemically active greenhouse gases in the climate system and their interaction with air quality in California.*

The uncertainty associated with the influence of aerosols on climate remains the dominant uncertainty in radiative forcing [IPCC, The Physical Basis of Climate Change. Intergovernmental Panel on Climate Change (available online at <http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>), 2007]. A better characterization of the effects of natural and anthropogenic aerosols on the radiative balance of the atmosphere is crucial for a more accurate prediction of the impact of human activities on climate, and vice-versa. Of the important processes involved in the indirect effects of aerosols on clouds, the mechanisms for the formation and transformation of ice nuclei remain some of the most uncertain.

*In FY2011, ESS invites laboratory, field and modeling proposals that focus on improving our understanding of the processes involved in the formation and transformation of ice nuclei in the atmosphere.*