

The Division of Atmospheric Sciences of the National Science Foundation supports research on aerosols and radiation primarily through the Atmospheric Chemistry, Climate Dynamics, and Physical Meteorology Programs. We support basic research including:

- Development of instruments to determine the chemical, physical, and optical properties of aerosols, including hygroscopicity and nucleating properties;
- Field studies aimed at enhancing understanding of micro- and macro-scale processes involving aerosols, aerosol-cloud relationships, and radiation – recent examples include support for INDOEX, TARFOX, SAFARI-200, the ACE series, Lake-ICE/Snow Band; studies of clouds and aerosols off the coast of California, including DYCOMS-II, and other smaller experiments including a study of the effect of atmospheric aerosols on the snowfall rate in the Western US.
- Laboratory studies aimed at a fundamental understanding of particle nucleation, freezing, and hygroscopic growth, deliquescence and efflorescence.
- Modeling – including the development of climate models with improved representation of effects of aerosols (including stratospheric aerosols) and clouds; radiative transfer modeling, cloud modeling, and global and regional chemical transport modeling including different types of aerosols and related processes.