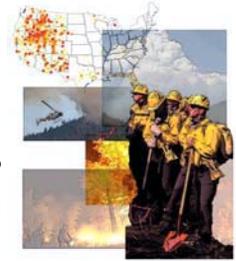


National Fire Plan

Using LIDAR to Monitor Smoke Characteristics Nationwide



Scientists at the Fire Chemistry Unit in Missoula, Mont., are using the remote sensing technology of LIDAR (Light Detection and Ranging) to gather real-time data about smoke; specifically, its concentrations, dynamics, dispersal conditions, and optical characteristics. This information will enable fire professionals, managers, and others to assess and predict the effects of smoke on visibility and air quality, particularly during a wildfire.

In concurrent research funded by the National Fire Plan, Fire Chemistry scientists are developing mobile LIDAR instruments that can sense concentrations of particulates in order to direct satellite measurements of smoke levels over large areas.

Scientists use a LIDAR because it is capable of mapping real-time measurements of particulate concentrations in three dimensions. The instrument is mounted either on a van or an aircraft that flies over the research area. Computerized controls can direct data collection and reduce it to meaningful maps that can be compared to other methods.

An Atmospheric Physicist who is an expert in LIDAR methods and the calculation of aerosol properties recently joined the Fire Chemistry staff.

Researchers contacted many leading experts in LIDAR in the federal government and at universities, seeking future cooperators and looking for groups able to collaborate on future LIDAR design. They are collaborating with the University of Iowa in order to assess whether their portable scanning LIDAR design can be used to measure particulate levels in smoke from wildland fires.

For additional information on the National Fire Plan, visit www.fireplan.gov