

"Correlation of DIAL Ozone Observations with Lightning"

Harold Peterson (USRA), Shi Kuang (UAH), William Koshak (NASA), and Michael Newchurch (UAH).

The purpose of this project is to see whether ozone maxima measured by the Differential Absorption Lidar (DIAL) instrument in Huntsville, AL may be traced back to lightning events occurring 24-48 hours beforehand. The methodology is to start with lidar measurements of ozone from DIAL. The HYbrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) model is then used to determine the origin of these ozone maxima 24-48 hours prior. Data from the National Lightning Detection Network (NLDN) are used to examine the presence/absence of lightning along the trajectory. This type of analysis suggests that lightning-produced NO_x may be responsible for some of the ozone maxima over Huntsville.
