

BNL-63544

OBSERVATIONS AND MODEL STUDIES OF OZONE PHOTOCHEMISTRY IN REGIONS WITH CONTRASTING LANDUSE

M. Trainer, S. A. McKeen, E.-Y. Hsie, B. T. Jobson, J. M. Roberts, J. Williams, P. D. Goldan, W. C. Kuster, D. D. Parrish, F. C. Fehsenfeld, and Y.-N. Lee

American Geophysical Union 1996 Fall Meeting, San Francisco, CA, Dec. 15-19, 1996.

An extended, slow moving high pressure system over the central United States set the stage for the formation and accumulation of ozone and other photochemical oxidants in the period of 7 to 17 July 1995, during the Southern Oxidants Field Study. Ozone is formed in the photo-oxidation of carbon monoxide and hydrocarbons in the presence of nitrogen oxides. These precursors of ozone are emitted both by natural and man-made sources. Studies in regions with distinctly different landuse, such as the agricultural region over Illinois and Indiana and the forested/ agricultural region of middle Tennessee allow the impact of the emissions of natural hydrocarbons to be evaluated. Airborne observations and studies with a 3-dimensional regional chemical transport model are used to examine the photochemistry of ozone and secondary products, such as hydrogen peroxide, formaldehyde, and peroxyacyl nitrates over regions with contrasting landuse.