

*AIRMAP, BNL, and the DOE  
Atmospheric Chemistry Program*

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*BNL-ACP has proposed an “Eastern Experiment” during the current funding period (FY01 - FY05)*

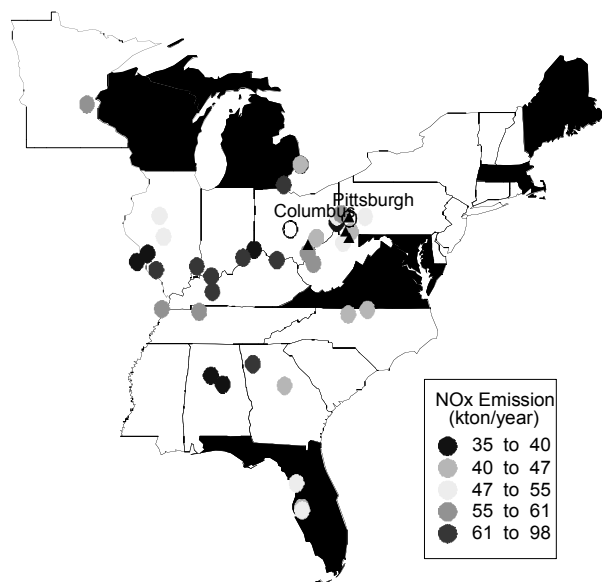
*The purpose of this Experiment is to-*

- 1. Conduct studies of aerosol /oxidant chemistry in an isolated urban plume and in power plant plumes sited in different background environments.*
- 2. Characterize the contribution of midwestern sources to ozone/aerosol burdens on the US East coast.*

*In addition to the study of daytime processes, this experiment would have a strong emphasis on the role of nocturnal transport, and on night-time chemical processes.*

## *Base of Experiment*

*Uncertain, but will be located somewhere in the source region. Columbus, OH; Pittsburgh, PA are possibilities.*



*Although based to the west, flights extending to the east coast are planned.*

## ***Schedule-***

*Experiment originally scheduled for Summer 03, but likely that it could be rescheduled for Summer 04 as this represents an opportunity to conduct our experiment in a larger context.*

*May also be interested in conducting preliminary measurements in Summer 2002.*

# *Resources- DOE G-1 Aircraft*



# *What can we measure?*

## G-1 Gas Phase Measurements

Species	Method	Source
O <sub>3</sub>	UV absorption; NO chemiluminescence	BNL
NO, NO <sub>2</sub> , NO <sub>y</sub>	O <sub>3</sub> chemiluminescence	BNL
CO	UV fluorescence, NDIR	BNL
PAN	GC/ECD or GC/Luminol	ANL or PNNL
SO <sub>2</sub>	Modified pulsed fluorescence	BNL
Speciated peroxides H <sub>2</sub> O <sub>2</sub> , HMHP etc.	Multichannel/ Fenton, peroxidase	BNL/SUNY
HCHO and other carbonyls	scrubber collection/ LC analysis	BNL
non-methane hydrocarbons	Canister collection/ GC analysis; PTRMS	ANL or York University, PNNL

# *What can we measure?*

## G-1 Aerosol Measurements

Parameters	Method	Source
Aerosol Composition	Particle into Liquid Sampler (PILS)	BNL / Lee
Aerosol Composition Single Particle	SPLAT	BNL / Imre
Particle Microphysics (0.2 – 3 $\mu\text{m}$ )	PMS / PCASP	PNNL
Particle Microphysics (3 nm – 1 $\mu\text{m}$ )	DMA system	BNL / Brechtel

## *Summary*

*Have substantial resources that we could bring to the Experiment. In addition to the aircraft may also be interested in a surface measurement site and could try to get the DOE Environmental Meteorology Program interested in providing meteorological support.*