NARSTO EPA_SS_PITTSBURGH Meteorological Data

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1. Data Set Description:

Ambient monitoring at the central supersite and a set of satellite sites in the Pittsburgh region included numerous meteorological measurements. Meteorological parameters measured during the sampling period included temperature, relative humidity, precipitation, wind speed and direction, UV intensity, and solar intensity.

The **Pittsburgh Supersite Program** was a comprehensive, multi-disciplinary investigation to characterize the ambient PM in the Pittsburgh region, to improve our understanding of the links between ambient PM and public health, and to develop new instrumentation for PM measurements. The central Supersite was located next to the Carnegie Mellon University campus near downtown Pittsburgh. Five additional sites served as Satellite sites. The measurement campaign lasted for 18 months (May 2001-October 2002). The specific objectives were to: Characterize the PM with regard to size, surface, and volume distribution; chemical composition as a function of size and on a single particle basis; temporal and spatial variability. Develop and evaluate the current and next generation atmospheric aerosol monitoring techniques including single particle measurements, continuous measurements, ultrafine aerosol measurements, improved organic component characterization, and others. Quantify the impact of the various sources of PM concentrations in the area including transportation, power plants, natural, etc. Combine the ambient monitoring study with the proposed indoor, health, and modeling studies to elucidate of the links between PM characteristics and their health impacts in this area.

The U.S. EPA Particulate Matter (PM) Supersites Program was an ambient air monitoring research program from 1999-2004 designed to provide information of value to the atmospheric sciences, and human health and exposure research communities. Eight geographically diverse projects were chosen to specifically address these EPA research priorities: (1) to characterize PM, its constituents, precursors, co-pollutants, atmospheric transport, and its source categories that affect the PM in any region; (2) to address the research questions and scientific uncertainties about PM source-receptor and exposure-health effects relationships; and (3) to compare and evaluate different methods of characterizing PM including testing new and emerging measurement methods. Data collected by these projects are publicly available at the NARSTO Permanent Data Archive, NASA Langley DAAC. Data users should acknowledge the U.S. EPA Particulate Matter (PM) Supersites Program and the project investigator(s) listed below.

The data set should be cited as follows:
Pandis, Spyros, Allen Robinson, and Beth Wittig. 2005. NARSTO EPA_SS_PITTSBURGH Meteorological Data. Available on-line via NARSTO Data and Information at the Atmospheric Science Data Center at NASA Langley Research Center, Hampton, Virginia, U.S.A.

More information see The Pittsburgh Air Quality Study Overview (PDF).

2. Sample Data Record/Data Format:

Data files are in the NARSTO Data Exchange Standard (DES) format that is described in detail on the NARSTO Quality Systems Science Center (QSSC) web site. The files follow a tabular layout and are stored as ASCII comma-separated values files (.csv). The DES does not rely on row position to identify specific information, but uses a tag to describe the information contained in the row. The DES is a self-documenting format with three main sections: the header contains information about the contents of the file and the data originator; the middle section contains metadata tables that describe/define sites, flags, and other codified fields; and the final section is the main data table that contains key sampling and analysis information and the data values. Descriptions of the standardized metadata fields are also available on the QSSC web site.

3. References:

- Stanier C. O., A.Y. Khlystov, and S.N. Pandis. 2004. Nucleation events during the Pittsburgh Air Quality Study: Description and relation to key meteorological, gas phase, and aerosol parameters. Aerosol Science and Technology, 38(S1), 253-264.
- Spyros Pandis, Cliff Davidson, and Allen Robinson. 2005. The Pittsburgh PM Supersite Program: A Multidisciplinary Consortium for Atmospheric Aerosol Research. Final Report, Cooperative Agreement Number R 82806101-0, Carnegie Mellon University, March 16, 2002 - June 15, 2003.

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Data Center:

The User and Data Services Office at the Langley Atmospheric Science Data Center is involved throughout the system to monitor the quality of data on ingest, to ensure prompt replies to user questions, to verify media orders prior to filling them, and to ensure that the needs of the users are being met.

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5. Acknowledgement:

When data from the Langley Atmospheric Science Data Center are used in a publication, we request the following acknowledgment be included: "These data were obtained from the NASA Langley Research Center Atmospheric Science Data Center".

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