New Measurement Product for Particulate Air Pollution Released

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Global Monitoring Division - **ESRL-GMD**
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The National Oceanic and Atmospheric Administration (NOAA) Earth System Research Laboratory, Global Monitoring Division has released a new high (2minute) resolution measurement of the cumulative reduction of sunlight at the surface due to particulate air pollution, technically known as "spectral aerosol optical depth" for 7 sites in the U.S. This data is available for use by air quality managers, the satellite community, and air quality, weather, and climate modelers. The stations are Bondville, IL; Fort Peck, MT; Goodwin Creek, MS; Sioux Falls, SD; Table Mountain (Boulder), CO; Penn State, PA; and Desert Rock, AZ. These QC aerosol optical depth (AOD) measurements are available at ftp://ftp.srrb.noaa.gov/pub/data/surfrad/aod through 2006 and are presented in numeric and graphical form for 5 different wavelengths.

Background:

The NOAA Surface Radiation Budget Network (SURFRAD) is the nations' first operational surface radiation budget network. It began in 1995 with four stations and added its seventh in 2003. Its primary objective is to support climate related research with continuous measurements of the components of surface radiation budget. In addition to the primary surface radiation budget measurements, several other measurements and derived quantities are produced to aid the wide variety of research and validation efforts that utilize SURFRAD data. The influence of aerosols on the radiation observations resulted in the inclusion of the aerosol measurements. Aerosols are produced from natural and manmade sources and can affect health and air quality as well the radiation budget as it relates to climate.

Significance:

These aerosol observations are necessary for the initialization of the radiative transport physics commonly used in satellite retrievals, climate models, and other research efforts. There are relatively few long-term observations of this type across the US and these data will contribute to the requirements to monitor and understand the affects of mankind's influence on the atmosphere and possible consequences. The Multi Filter Rotating Shadowband Radiometer, which makes these aerosol observations, also provides information on total water vapor and ozone. At a recent conference NASA researchers urged the release of the NOAA SURFRAD aerosol product because "it is rare for an observing network to have collocated ancillary data to support research."

More information: http://www.srrb.noaa.gov/surfrad/

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