



Application of Data Products and Services from the NASA Atmospheric Science Data Center

J. Closs (1), N. Ritchey (1) and M. Ferebee (2)

(1) Science Systems and Applications, Inc. Atmospheric Science Data Center, Hampton, VA, USA, (2) NASA Langley Research Center Atmospheric Science Data Center, Hampton, VA, USA (j.w.closs@nasa.gov / Fax: +001 757-8643070 / Phone: +001 757-8641195)

The NASA Langley Research Center Atmospheric Science Data Center (ASDC) is responsible for processing, archiving, and distributing NASA's Earth science data in the areas of radiation budget, clouds, aerosols, and tropospheric chemistry. Langley established the ASDC in 1991 to support the Earth Observing System (EOS) as part of NASA's Science Mission Directorate and the U.S. Global Change Research Program, and is one of several Distributed Active Archive Centers sponsored by NASA as part of the EOS Data and Information System (EOSDIS). ASDC specializes in atmospheric data important to understanding the causes and processes of global climate change and the consequences of human activities on the climate.

Applications of these data include climate change research, environmental decision making, and education. Data from the Measurements of Pollution in the Troposphere (MOPITT) instrument on the Terra satellite are used to monitor carbon monoxide released by wildfires around the world. Data from the Multi-angle Imaging SpectroRadiometer (MISR) were used to model smoke plume dispersion from the World Trade Center disaster in New York. The Tropospheric Emission Spectrometer (TES) onboard the Aura satellite provides coincident measurements of ozone and carbon monoxide to better understand the complex atmospheric processes associated with biomass burning. All of these examples share the common goal of understanding and predicting the potentially harmful effects of large scale atmospheric pollution on humans.

ASDC provides several web-based data search and order tools to access data holdings in two separate systems, while the EOS Data Gateway (EDG) and Warehouse Inven-

tory Search Tool (WIST) interfaces allow searching and ordering of Earth science data from multiple NASA and affiliated data centers. These tools allow data searches by project, geophysical parameter, data set, and spatial and temporal refinements. Project-specific custom order tools are also available. A large effort to replace these systems with a single, advanced, scalable system is currently underway. The new system will enable efficient and fast access to a multitude of data, and provide advanced subsetting and visualization tools.

ASDC supports more than 40 projects and has over 1800 publicly available archived data sets. The current data archive volume is over 1.6 Petabytes, and last year approximately 250 Terabytes of data were distributed to more than 20,500 customers in over 175 countries. Most of this data volume is produced from instruments on the EOS Terra, Aqua and Aura Earth observing satellites.