

One-Stop Shopping: Getting the Data You Need

From ARM's informational website, www.arm.gov, users can browse instruments, measurements, and data web pages to find data streams of interest to place in their cart. Just look for the "Add to Cart" button on the right side of the page, and click it. The data cart will provide a series of selection criteria that leads to the data stream that best suits the need. After all the desired data files are in the cart, select "Place Order" and the Data Archive will process and deliver the data to an ftp site for downloading.

To assist the Data Archive in reporting user statistics, users are requested to create accounts to log in. Accounts are free and publicly available. Information obtained from these accounts is never shared and used only for the purpose of characterizing the user community as a group. Account holders will also receive important alerts about the data previously delivered to them and may visit www.archive.arm.gov for more advanced options. Data quality information and visualizations (i.e., data plots of the selected data) are also available.

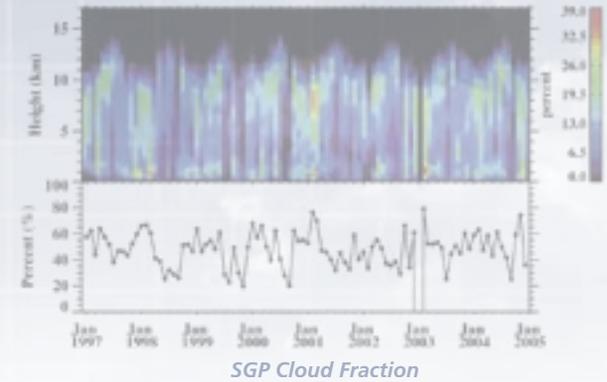


Using a series of pick lists, browsers can build a custom order of ARM data to be filled by the Data Archive.

What You Need To Do

1. Go to the ARM website: www.arm.gov.
2. Select an instrument, measurement, or data web page.
3. Look for "Add to Cart" button, along the right side, while browsing.
4. Answer selection criteria of time, location, and measurement type.
5. Enter your user name from the Data Archive, or sign up for a free account.
6. Receive email notification of data delivery.
7. Go to ftp site and pick up the data.

Don't forget! Refer back to the ARM website for technical contacts and specific information about the data.



Contact Information

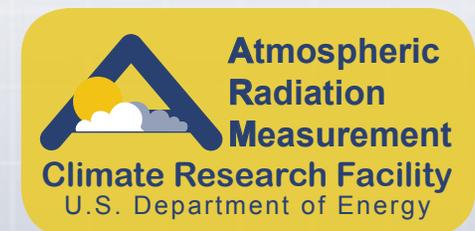
Data Archive
www.archive.arm.gov
info@arm.gov
 1-888-ARM-DATA

Data Quality Office
dq.arm.gov
problems@arm.gov
 405-325-6667

Technical Coordination Office
www.arm.gov
www@arm.gov
 509-372-4856



Ordering ARM Data



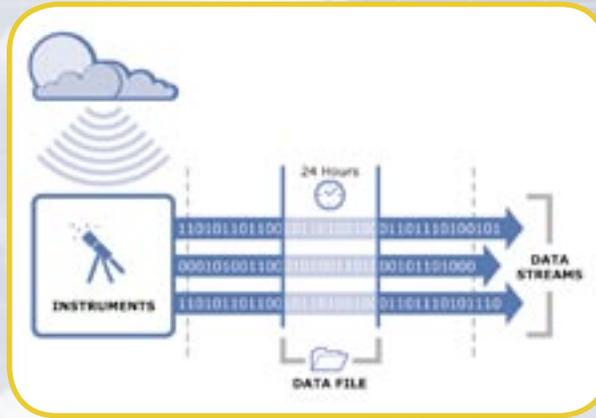
Atmospheric Data from Sites Around the World

In support of the Atmospheric Radiation Measurement (ARM) Program, the ARM Climate Research Facility (ACRF) operates several highly-instrumented ground stations and a mobile facility to study the effects of clouds on global climate change. Designated a national scientific user facility by the DOE's Office of Science, the ACRF strives to deliver atmospheric data reliably, quickly, and in a useful format to the scientific community.

Three permanent ACRF locales represent a broad range of climate conditions: the **Southern Great Plains** in Oklahoma, the **Tropical Western Pacific**, and the **North Slope of Alaska**. In addition, the portable ARM Mobile Facility enables data collection in different climate regions. Numerous instrument platforms are available from each site, including radiometer suites that measure solar and terrestrial radiation; tower-mounted instruments that measure wind, temperature, and humidity; subterranean sensors that measure soil moisture and thermal properties; a host of cloud-observing instruments that measure cloud extent and microphysical properties; and instruments for observing atmospheric aerosols. Data collection began at the Southern Great Plains in late 1992, at the Tropical Western Pacific in 1996, and at the North Slope of Alaska in 1997.



Data generated by ACRF instruments in the field are transmitted to the Data Archive for distribution. Sophisticated networking and computing infrastructure processes the data from all sites on an hourly basis and makes daily updates available for general users through satellite networking, specialized data movement processes, and a tight configuration management process.



A day of data files is “bundled” or processed into a single 24-hour file that represents a data stream, which is then stored at the Data Archive.

Keep the Data Flowing

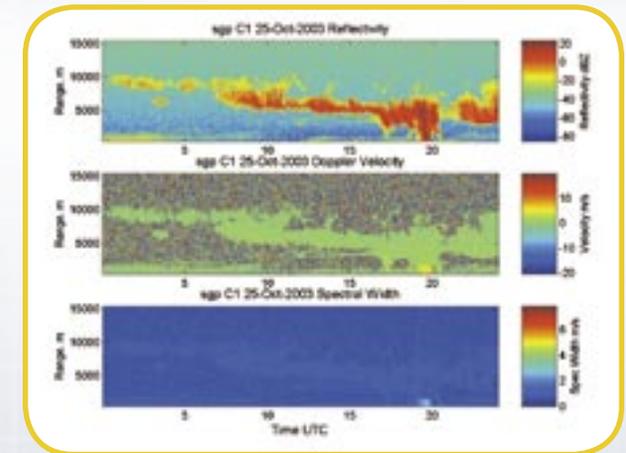
Data is an invaluable tool to the research community, and managing the volume of ARM data is a very challenging process. Our goals are to

- ensure continuous operation of state-of-the-art instruments to the best of their capabilities
- collect measurement data at the ACRF sites
- transfer measurement data to the central Data Management Facility
- “ingest” data into a common, standardized format (e.g., NetCDF, a self-describing binary format) and process into a series of daily files with a similar structure, which is referred to as the data stream
- create documentation describing the data stream
- perform quality analysis of the data
- perform supplemental processing, which results in derived data (aka “value-added products”)
- reprocess the measurements as necessary to correct errors or otherwise ensure a complete, representative data set
- acquire and process non-ARM data products of interest to the ARM scientific community through the External Data Center
- transfer raw and processed measurement data to the Data Archive
- make data files publicly available to a globally distributed user community.

Quality Data—And Lots of It!

Serving nearly 2000 registered users from 7 U.S. agencies, 110 universities, and 40 countries, the Data Archive collects and delivers about a terabyte of data per month. Web-based interfaces enable both new and experienced users to navigate nearly **50 terabytes** of available data and select sets from over **7.5 million data files** collected as of November 2005.

As part of the data collection effort, ARM scientists and ACRF infrastructure staff developed an extensive data quality program. ACRF's Data Quality Office is responsible for ensuring that quality assurance results are communicated to (1) data users, so that they may make informed decisions when using the data, and (2) ACRF's site operators and engineers, to facilitate optimal instrument performance and minimize the amount of unacceptable data collected. Through the use of tools like the Data Quality Health and Status (DQ Hands) tool and the NCVweb, an interactive data plotting tool, data quality staff inspect and assess ARM data on a near real-time basis. Supplemental processing of the data files also occurs to create new file levels that include quality flags and thumbnail views of the data plots.



Reporting Problems Equals Continuous Improvement

While every effort is made to ensure the quality and accuracy of the data, the occasional problem does arise. If quality issues are discovered while using ARM data, please contact the Data Quality Office at problems@arm.gov or see dq.arm.gov for online reporting options. Be sure to include the data stream names and a description of the problem or error received.