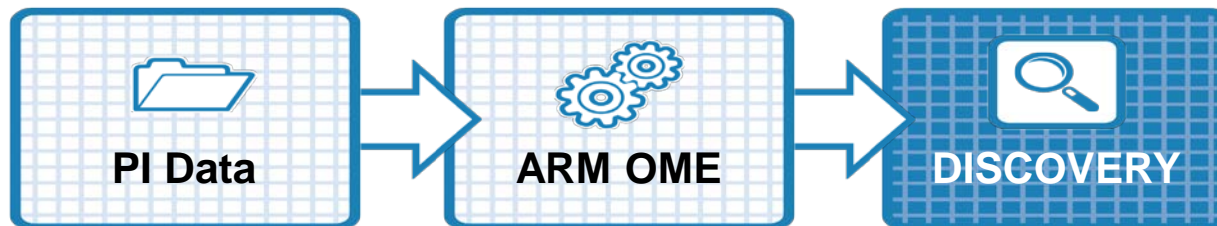




How to Archive, Discover and Acknowledge ARM Data

Giri Palanisamy
Raymond McCord

ARM Data Archive



U.S. DEPARTMENT OF
ENERGY

Office of
Science

Data Product Registration and Submission

<http://www.arm.gov/data/pi>



[ARM.gov](#) >> [Data](#) >> [Data Documentation](#) >> [Data Product Registration and Submission](#)

Data Product Registration and Submission

The procedure for principal investigators to submit ARM science research products, field campaign data, or DOE-supported research data to the ARM Data Archive is the following:

1. To begin, use the [Data Product Registration and Submission](#) form.
2. Identify yourself—either from the pick list or by manual entry.
3. Select a **Data Type**. This choice determines the level of review and the procedure for handling and approving your documentation and accompanying data submissions within the ARM Climate Research Facility. Currently, three **Data Type** options are available.
 - >> **ARM Principal Investigator (PI) Data Product** – reviewed by ARM Translators and Infrastructure Representative.
 - >> **ARM Field Campaign Data** – reviewed by ARM External Data Center (XDC) staff responsible for handling field campaign data submissions.
 - >> **Research Data for the ARM Data Archive** – sent directly to metadata reviewers for the ARM Data Archive.
4. Fill out the [Data Product Registration and Submission](#) form as completely and accurately as possible. Nobody is better equipped or suited to describe a data submission than the scientist who created it. The Data Product Registration and Submission form allows PIs to attach files, including data files, additional documentation files (e.g., readme files), technical reports, and pertinent science articles. Scientists are encouraged to provide these additional materials.
5. Submit the [Data Product Registration and Submission](#) form. Once you have completed and submitted the form, and all mandatory fields are verified, you will receive notification to confirm successful submission.

For assistance with your [Data Product Registration and Submission](#), please contact [Giri Palanisamy](#).

Policies, Plans, Descriptions

[Data Documentation Home](#)

- >> [Data Sharing and Distribution Policy](#)
- >> [Data Management and Documentation Plan](#)
- >> [Data Product Registration and Submission](#)
- >> [Reading netCDF and HDF Data Files](#)
- >> [Time in ARM netCDF Data Files](#)

Data Archive Documentation

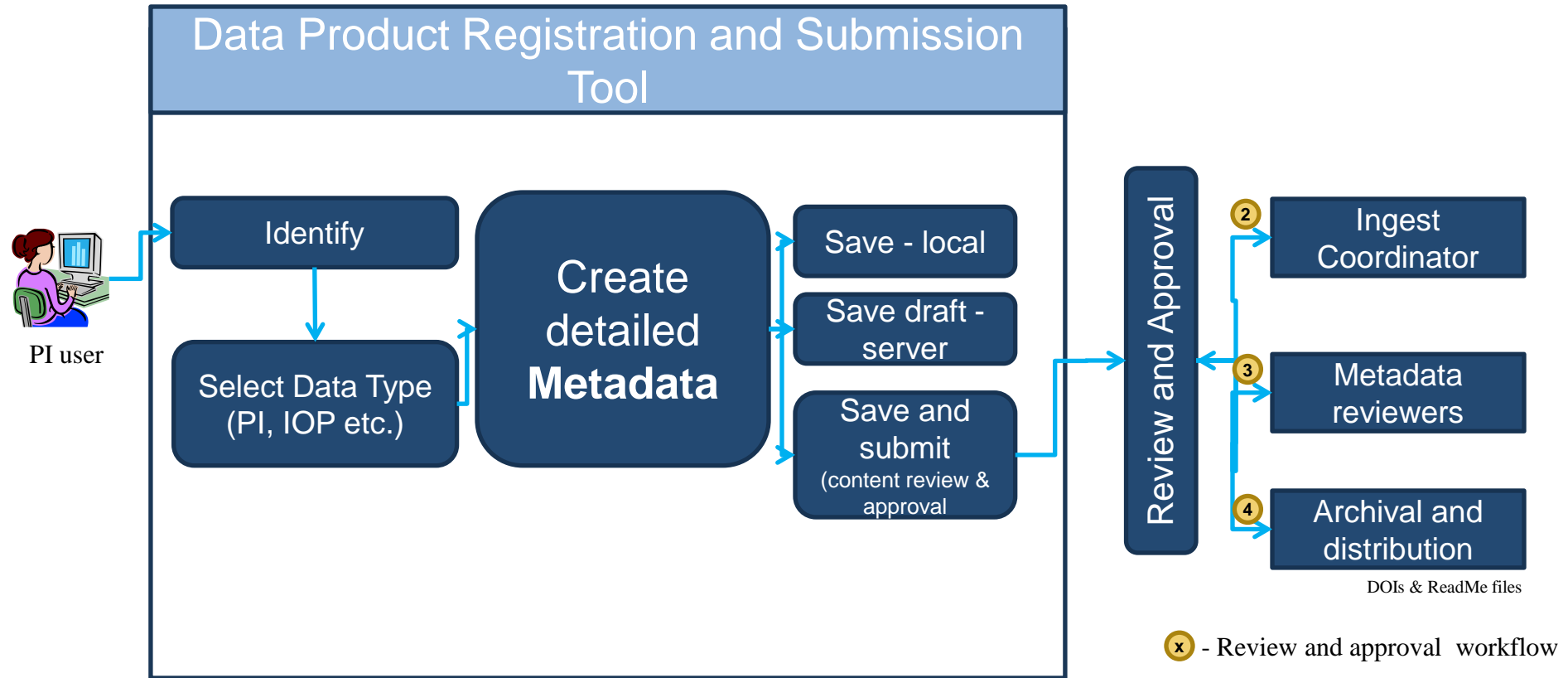
- >> [ARM Archive's Catalog of Data Streams](#) (Updated monthly)
- >> [Access to Historical ARM Data](#)
- >> [More on Understanding and Finding ARM Data](#)
- >> [Data Quality Problem Reporting](#)

Your Metadata is Critical:

- Improves data discovery and understanding
- Prepare the data package for efficient distribution
- Properly categorize your data
- Facilitate proper credits to all the authors

Title:	Atmospheric State, Cloud Microphysics & Radiative Flux		
Data Type:	research data - ASR funded		
Metadata Contact Info:	Organization Name/Individual Name:		Gerald Mace
	Email: mace@met.utah.edu		Phone: (801) 585-9489
	Street: William Browning135 S 1460 East Rm 819		City: Salt Lake City
	State: UT		Postal: 84112
Investigator(s):	Gerald Mace		
Publication Info:	Publication Date:	Publication Place:	Publisher:
	20080601	Journal of Climate	AMS
Geoform:	Value Added Products		
Status:	ongoing		
Data Update Frequency:	as needed		
Data Volume:	1 TB		
File Naming Convention:	site.Integrate_Column_AveragingInterval-Mace.yyyyymmdd.000000.v2.cdf		
Directory Organization:	each site directory has subdirectories for the file type and then subdirectories for the years		
Abstract:	Atmospheric thermodynamics, cloud properties, radiative fluxes and radiative heating rates for the ARM Southern Great Plains (SGP) site. The data represent a characterization of the physical state of the atmospheric column compiled on a five-minute temporal and 90m vertical grid. Sources for this information include raw measurements, cloud property and radiative retrievals, retrievals and derived variables from other third-party sources, and radiative calculations using the derived quantities.		
Purpose:	Data were collected in order to help and improve the climate and earth system models.		
Site Information:	Sites		
	sgp,nsa,twpc1,twpc2,twpc3		
Content Time Range:	Begin: 19970101	End: 20091231	
Scientific Measurements(s):	Measurement name		Variables
	averaged cloud radar	column_cfrac_mpl	
	averaged atmospheric state	skin_temp sndg_flag pressure sfc_temp precip_rate sfc_pressure mxrat temp sfc_mxrat	
	averaged cloud layers	top_height_layer_1 base_temp_layer_1 top_temp_layer_2 top_height_layer_3 number_of_layers base_height_layer_3 first_cbh base_height_layer_1	

PI and IOP Data Registration Steps



<http://www.arm.gov/data/pi>

ARM Data Product Registration and Submission Form (OME)

Data Quality

The Data Quality section of the metadata record is used to provide a general assessment of the quality of the dataset. There are four main components to this section:

Attribute Accuracy Report

An attribute is a defined characteristic of an entity within the dataset. E.g A data set might include the entity "road" and have the attribute "road type"

How correct are the attribute values?

Attribute Accuracy refers to assessments as to how 'true' the attribute values may be - it may refer to field checks, cross-checks with other documents, statistical analysis values and parallel independent measures. It does not refer to the positional accuracy of the feature

Positional Accuracy Report

Consistency and Completeness Report

Logical Consistency Report provides an explanation for bad values or conditions and what tests and/or database QA/QC routines, if any, were used to check for data inconsistencies.

Does the dataset contain any bad values? If yes, what Quality Control/Quality Assurance (QA/QC) procedures were used?

E.g. do line intersect only where intended? Are polygon too small or lines too close?

Was there any factor affecting your research like cloud cover, precipitation e.t.c? Please explain:

- Data Type
- Description and keywords
- Contact information
- Data Quality
- When and Where
- Related Citations
- Analytical Tools
- Save, revisit and Submit

Improving Data Discovery

After

PI Product : Derived Cloud Boundary Heights for Graciosa Island, Azores

[RESEARCH DATA - ASR FUNDED]

The motivation for developing the WACRARSCL is to use the Dong et al. 1998 method to retrieve cloud microphysical properties, such as cloud droplet effective radius, cloud droplets number concentration, and optical thickness. These retrieved properties have been used to validate the satellite retrieval, and evaluate the climate simulations and reanalyses. We had been using this method to retrieve cloud microphysical properties over ARM SGP, NSA sites. We also modified the method for the AMF at Shouxian China and some IOPs, e.g. ARM IOP at SGP at March, 2000. The ARSCL data from ARM data archive over SGP and NSA have been used to determine the cloud boundary and cloud phase. For these ARM permanent sites, the ARSCL data developed based on MCCR measurements, however, there are no WACRARSCL data available at Azores field champion, we followed the steps to generate WACRARSCL and also include the MPLCMASK cloud retrievals to determine the most accurate cloud boundaries and including the thin cirrus clouds that WACR may be under-detected. We use these WACRARSCL as input to retrieve the cloud microphysical properties. Due to the different temporal resolution of the WACRARSCL and cloud properties, we submit WACRARSCL and cloud properties as two separate netcdf files.

Purpose

Data were collected in order to validate satellite retrievals and evaluate climate models.

Data Details

DEVELOPED BY Xiquan Dong							
CONTACT	Baike Xi						
	baike@aero.und.edu						
	(701) 777-2767						
	4149 University Ave Grand Forks, ND 58202						
RESOURCE(S)	Data Directory						
DATA FORMAT	netcdf						
DATA USAGE	The data are in netcdf format. Every parameter is averaged within 5 minute intervals.						
DATA VOLUME	less than 50 GB						
SITE INFORMATION	GRW Graciosa Island, Azores, Portugal; Mobile Facility						
CONTENT TIME RANGE	2009.06.05 — 2010.12.31						
SCIENTIFIC MEASUREMENTS	<table><tr><th>Measurement</th><th>Variables</th></tr><tr><td>CLOUD TOP HEIGHT</td><td>[expand] CloudTopBestEstimate (Combined WACR ReflectivityBestEstimate and MPLCMASK highest cloud height, 30 sec resolution)</td></tr><tr><td>CLOUD BASE HEIGHT</td><td></td></tr></table>	Measurement	Variables	CLOUD TOP HEIGHT	[expand] CloudTopBestEstimate (Combined WACR ReflectivityBestEstimate and MPLCMASK highest cloud height, 30 sec resolution)	CLOUD BASE HEIGHT	
	Measurement	Variables					
	CLOUD TOP HEIGHT	[expand] CloudTopBestEstimate (Combined WACR ReflectivityBestEstimate and MPLCMASK highest cloud height, 30 sec resolution)					
CLOUD BASE HEIGHT							
INSTRUMENTS	Micropulse Lidar W-Band (95 GHz) ARM Cloud Radar Vaisala Ceilometer Microwave Radiometer						
ATTRIBUTE ACCURACY	No formal attribute accuracy tests were conducted.						
POSITIONAL ACCURACY	No formal positional accuracy tests were conducted.						
DATA CONSISTENCY AND COMPLETENESS	Data set is considered complete for the information presented, as described in the abstract. Users are advised to read the rest of the metadata record carefully for additional details.						
ACCESS RESTRICTION	No access constraints are associated with this data.						

POSITIONAL ACCURACY No formal positional accuracy tests were conducted.

DATA CONSISTENCY AND COMPLETENESS Data set is considered complete for the information presented, as described in the abstract. Users are advised to read the rest of the metadata record carefully for additional details.

ACCESS RESTRICTION No access constraints are associated with this data.

USE RESTRICTION No use constraints are associated with this data.

FILE NAMING CONVENTION wacrarsd1dongM1.b1.yyyymmdd.hhmmss.cdf

CITATIONS Dong X., T.P. Ackerman, and E.E. Clothiaux, 1998: Parameterizations of Microphysical and Radiative Properties of Boundary Layer Stratus from Ground-based measurements . J. Geophys. Res . 102, 31,681-31,393.

Dong X. , and G.G. Mace, 2003: Profiles of Low-level Stratus Cloud Microphysics Deduced from Ground-based Measurements . J. Atmos and Oceanic Tech . 20 ,42-53.

Dong, X., B. Xi, A. Kennedy, P. Minnis and R. Wood, 2013: A 19-month of Marine Aerosol-Cloud-Radiation Properties derived from DOE ARM AMF deployment at the Azores: Part I: Cloud Fraction and Single-layered MBL cloud Properties. Journal of Climate, in press.

ARM Data Discovery and Access

The screenshot shows the ARM Data Discovery website. The header features the ARM Climate Research Facility logo on the left, the text 'DATA DISCOVERY' in the center, and the U.S. Department of Energy Office of Science logo on the right. Below the header is a search bar with the placeholder text 'Search for...' and buttons for '(Start date)', '(End date)', and 'GO'. A navigation bar below the search bar contains icons for home, menu, and shopping cart, along with links to 'ARM ARCHIVE', 'HELP', and 'FEEDBACK'. The main content area has a 'Welcome' section with a paragraph about the Data Discovery browser and a list of categories to choose from.

ARM
CLIMATE RESEARCH FACILITY

DATA DISCOVERY

U.S. DEPARTMENT OF ENERGY | Office of Science

Search for... (Start date) (End date) GO

ARM ARCHIVE // HELP // FEEDBACK

Welcome

ARM's Data Discovery browser features pre-selected sorts and search logic to help you find atmospheric and climate data faster. The browser includes convenient access to data quality reports, graphical displays of data availability/quality, and data plots.

To begin, **choose one of the categories** from the boxes below or **enter a keyword** in the search box above. Any keyword combinations are supported, including wildcards, quotes, and Boolean operators such as AND/OR, +, and -.

Showcase Data »

Modeling Best Estimates

The ARM Best Estimate data products are ARM datastreams specifically tailored to

Search by Category »

Aerosols

The effect of aerosols is measured by instrument systems and lidars that provide

Atmospheric State

Surface-based and airborne instruments measure the thermal, moisture, and kinetic

<http://www.archive.arm.gov>

Cloud Properties

Active and passive remote sensing instruments are used to measure the macroscopic properties (horizontal and vertical distributions) of clouds, and the microphysical properties (sizes, shapes, and phases [water or ice]) of the particles that comprise the clouds.

Radiometric

Radiometric measurements provide data on the propagation of electromagnetic energy through the atmosphere. These types of measurements represent the majority of ARM data, and are obtained using various types of active (such as radar and lidar) and passive (such as broadband radiometers and spectral sensors) sensors.

Surface Properties

Measurements obtained at, near, or beneath (< 2 m) the earth's surface determine properties including soil temperature and moisture content; surface reflectivity; and fluxes of momentum,



Data Citation using Digital Object Identifiers (DOIs)



U.S. DEPARTMENT OF
ENERGY

Office of
Science

Digital Object Identifiers (DOIs) For Your Data

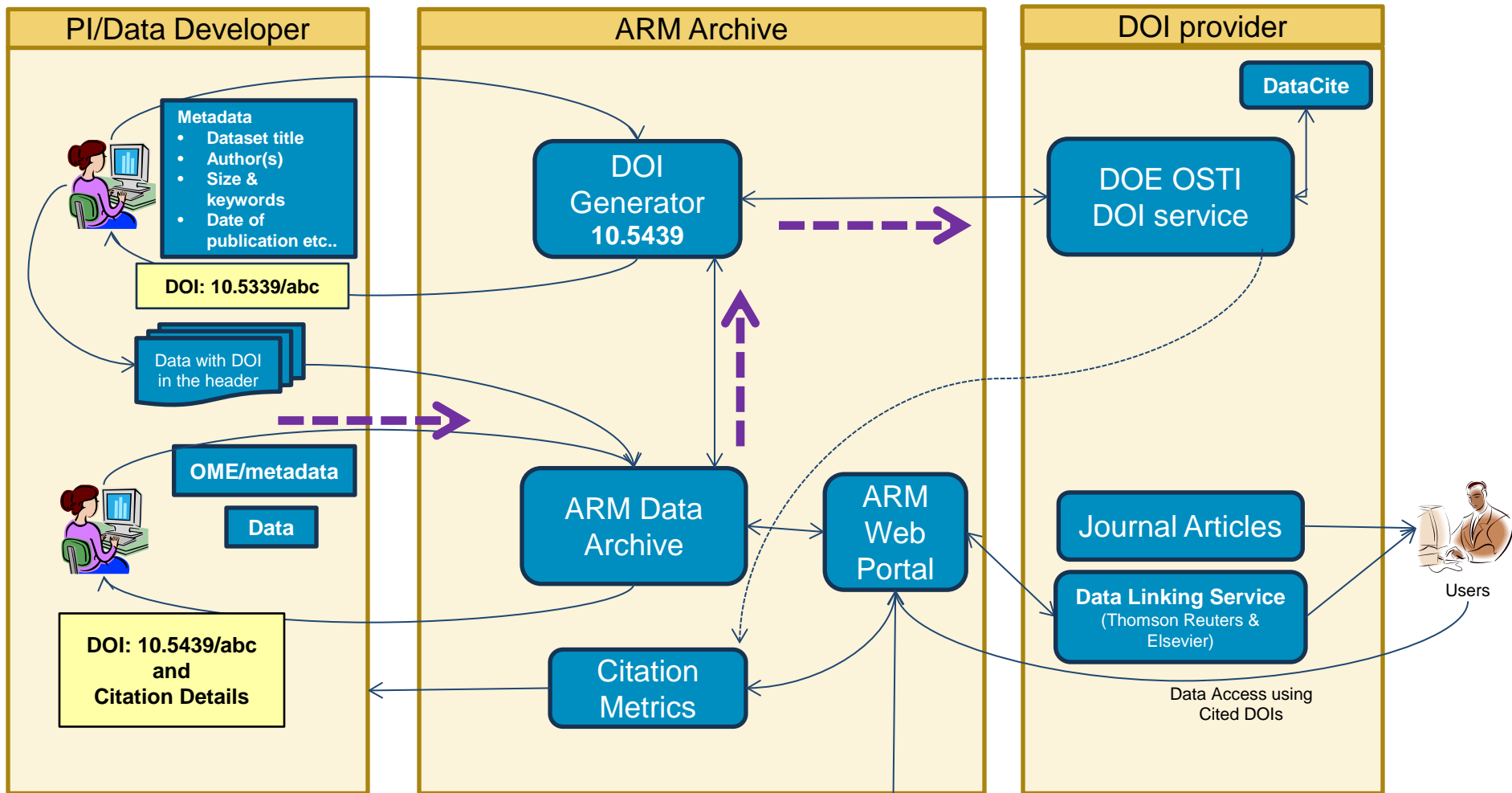
Benefits of assigning DOIs to your data:



10.5439/1021460

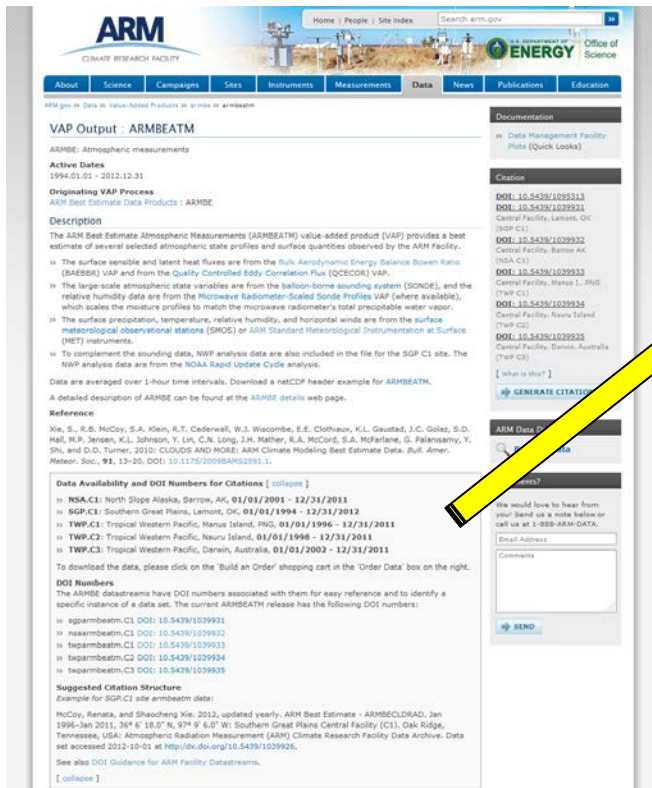
- Provide proper credit to all authors
 - DOIs will be registered with all authors involved in creating data products
- Create persistent, globally unique, fully resolvable ids for ARM/ASR datasets
- DOIs allow the users to more directly cite the exact ARM data that they used in their research.
- DOIs also allow the future data users and the ARM program to easily track the data cited in various publications, and can answer questions such as:
 - Show me the exact data (and the data creator) that this journal article is referring
 - List of papers using my data (citation index)
 - List of articles citing ARM data

Assigning DOIs to your Data



DOIs – Current Example

Product: ARMBE



ARM
CLIMATE RESEARCH FACILITY

Home / People / Site Index Search arm.gov

About Science Campaigns Sites Instruments Measurements Data News Publications Education

ARM.gov is Data in Value-Added Products in service to armbeam

VAP Output - ARMBEATM

ARMBE: Atmospheric measurements

Active Dates
1994.01.01 - 2012.12.31

Originating VAP Process
ARM Best Estimate Data Products : ARMBE

Description

The ARM Best Estimate Atmospheric Measurements (ARMBEATM) value-added product (VAP) provides a best estimate of several selected atmospheric state profiles and surface quantities observed by the ARM Facility.

- 1) The surface sensible and latent heat fluxes are from the Bulk Aerodynamic Energy Balance Bowen Ratio (BAERBR) VAP and from the Quality Controlled Eddy Correlation Flux (QCECOR) VAP.
- 2) The large-scale atmospheric state variables are from the balloon-borne sounding system (SONDE), and the relative humidity data are from the Microwave Radiometer-Scaled Sonde Profiles VAP (where available), which scales the moisture profiles to match the microwave radiometer's total precipitable water vapor.
- 3) The surface precipitation, temperature, relative humidity, and horizontal winds are from the surface meteorological observational stations (SMOS) or ARM Standard Meteorological Instrumentation at Surface (METS) instruments.
- 4) To complement the sounding data, NWP analysis data are also included in the file for the SGP C1 site. The NWP analysis data are from the NOAA Rapid Update Cycle analysis.

Data are averaged over 1-hour time intervals. Download a netCDF header example for ARMBEATM.

A detailed description of ARMBE can be found at the ARMBE details web page.

Reference

Xie, S., R.B. McCoy, S.A. Klein, R.T. Cederwall, W.J. Wiscombe, E.E. Clothiaux, K.L. Gustaf, J.C. Golaz, S.D. Hall, M.P. Jensen, K.L. Johnson, T. Liu, C.N. Long, J.H. Mather, R.A. McCreedy, S.A. McFarlane, G. Paterlini, Y. Shi, and D.D. Turner, 2012: CLIMOS AND MORE: ARM Climate Modeling Best Estimate Data. Bull. Amer. Meteor. Soc., 93, 13-20. DOI: 10.1175/2009AMS2893.1.

Data Availability and DOI Numbers for Citations [collapse]

- 1) NSA.C1: North Slope Alaska, Barrow, AK, 01/01/2001 - 12/31/2011
- 2) SGP.C1: Southern Great Plains, Lamont, OK, 01/01/1994 - 12/31/2012
- 3) TWP.C1: Tropical Western Pacific, Manus Island, PNG, 01/01/1996 - 12/31/2011
- 4) TWP.C2: Tropical Western Pacific, Nauru Island, 01/01/1998 - 12/31/2011
- 5) TWP.C3: Tropical Western Pacific, Darwin, Australia, 01/01/2002 - 12/31/2011

To download the data, please click on the 'Build an Order' shopping cart in the 'Order Data' box on the right.

DOI Numbers

The ARMBE datastreams have DOI numbers associated with them for easy reference and to identify a specific instance of a data set. The current ARMBEATM release has the following DOI numbers:

- 1) sgparmbeatm.C1 DOI: 10.5439/1039931
- 2) nsarmbeatm.C1 DOI: 10.5439/1039932
- 3) twparmbeatm.C1 DOI: 10.5439/1039933
- 4) twparmbeatm.C2 DOI: 10.5439/1039934
- 5) twparmbeatm.C3 DOI: 10.5439/1039935

Suggested Citation Structure

Example for SGP.C1 site armbeatm data:

McCoy, Renata, and Shaoheng Xie, 2012, updated yearly. ARM Best Estimate - ARMBECLDRAD. Jan 1996-Jan 2011, 36° 6' 18.0" N, 97° 9' 6.0" W: Southern Great Plains Central Facility (C1). Oak Ridge, Tennessee, USA: Atmospheric Radiation Measurement (ARM) Climate Research Facility Data Archive. Data set accessed 2012-10-01 at <http://dx.doi.org/10.5439/1039926>.

See also DOI Guidance for ARM Facility Datastreams.

[collapse]

Data Availability and DOI Numbers for Citations [collapse]

DOI Numbers

The ARMBE datastreams have DOI numbers associated with them for easy reference and to identify a specific instance of a data set. The current ARMBEATM release has the following DOI numbers:

- » sgparmbeatm.C1 DOI: 10.5439/1039931
- » nsarmbeatm.C1 DOI: 10.5439/1039932
- » twparmbeatm.C1 DOI: 10.5439/1039933
- » twparmbeatm.C2 DOI: 10.5439/1039934
- » twparmbeatm.C3 DOI: 10.5439/1039935

Suggested Citation Structure

Example for SGP.C1 site armbeatm data:

McCoy, Renata, and Shaoheng Xie, 2012, updated yearly. ARM Best Estimate - ARMBECLDRAD. Jan 1996-Jan 2011, 36° 6' 18.0" N, 97° 9' 6.0" W: Southern Great Plains Central Facility (C1). Oak Ridge, Tennessee, USA: Atmospheric Radiation Measurement (ARM) Climate Research Facility Data Archive. Data set accessed 2012-10-01 at <http://dx.doi.org/10.5439/1039926>.

See also DOI Guidance for ARM Facility Datastreams.

[collapse]

<http://www.arm.gov/data/vaps/armbe/armbeatm>



Citing ARM Datastreams



U.S. DEPARTMENT OF
ENERGY

Office of
Science

Use of ARM DOIs

The screenshot shows the ARM Climate Research Facility website. The main navigation bar includes links for Home, People, Site Index, and a search bar. The site is part of the U.S. Department of Energy, Office of Science. The breadcrumb trail indicates the path: ARM.gov > Data > Instrument Datastreams > sondewnpb.

DataStream : SONDEWNPB

Balloon-borne sounding system (BBS): Vaisala-processed winds, press., temp, RH

Active Dates
1994.04.12 - 2013.10.22

Measurement Categories
[Atmospheric State](#)

Originating Instrument
Balloon-Borne Sounding System (SONDE)

Example [sondewnpb](#) Archive Data Plot

Measurements
Only measurements considered **scientifically relevant** are shown below *by default*.
☐ Show all measurements

Measurement	Units	Variable
Atmospheric moisture	C	dp (time)
Dewpoint Temperature	%	rh (time)
Atmospheric moisture		
Relative Humidity		

Citation
DOI: [10.5439/1021460](#)
[What is this?]
[GENERATE CITATION](#)

Browse Data

Comments?
We would love to hear from you!
Send us a note below or call us at 1-888-ARM-DATA.
Email address:
Comments:

Generating Citations

The screenshot shows the ARM Climate Research Facility website with a 'Generate Citation' modal form open. The form is for the dataset 'SONDEWNPN' and includes fields for Author, Original Publication Date, Update Period, Location Accessed, Editor(s) or Compiler(s), Date Accessed, and Citation(s). The citation text is displayed in a box below the form, and there are buttons for 'Remove', 'Modify', and 'Send me a copy'.

ARM
CLIMATE RESEARCH FACILITY

Home | People | Site Index Search arm.gov

U.S. DEPARTMENT OF **ENERGY** Office of Science

About Science

ARM.gov » Data » Instruments

DataStream :

Balloon-borne sounding temp, &RH

Active Dates
1994.04.12 - 2013.10.15

Measurement Category
Atmospheric State

Originating Instrument
Balloon-Borne Sounding

Measurements
Only measurements collected

☐ Show all measurements

Measurement Units Variable

Atmospheric moisture C dn (time)

Generate Citation Datastream Name **SONDEWNPN**

Author Atmospheric Radiation Measurement (ARM) Climate Research Facility

Original Publication Date 1994

Update Period hourly

Location Accessed **Site** North Slope Alaska (NSA) **Facility** ☒ Central Facility, Barrow AK (C1) **Dates Used** Start: 2012-10-01 End: 2013-10-15

Editor(s) or Compiler(s) D. Holdridge, J. Kyrouac and R. Coulter

Date Accessed 2013-10-23

Citation(s) Add citation for another site or time

Atmospheric Radiation Measurement (ARM) Climate Research Facility. 1994, updated **hourly**. SONDEWNPN. **2012-10-01 to 2013-10-15, 71.323 N 156.609 W: North Slope Alaska (NSA) Central Facility, Barrow AK (C1)**. Compiled by D. Holdridge, J. Kyrouac and R. Coulter. Atmospheric Radiation Measurement (ARM) Climate Research Facility Data Archive: Oak Ridge, Tennessee, USA. Data set accessed **2013-10-23** at <http://dx.doi.org/10.5439/1021460>

[Remove](#) [Modify](#)

☐ Send me a copy **DONE**

Office of Science

ARM - Recommended Citation Format

- *Author*
- *Original publication date*
- *Update period, if applicable (daily, monthly, quarterly, yearly, etc.)*
- *Dataset name*
- ***Dates used****
- ***Locations**** (latitude/longitude, site name, and facility identifier)
- *Editor(s) or compiler(s) or collaborator(s)*
- *Place of publication*
- *Publisher*
- ***Date accessed****
- ***DOI****

**** Needed for future replication of data requests***

<http://www.arm.gov/data/docs/doi-guidance>

Sample Citations

Citation Examples

1. Single datastream, single site, single data range:

Atmospheric Radiation Measurement (ARM) Climate Research Facility. 1994, updated daily. Balloon-borne sounding system (SONDEWNPN). Oct. 2010–March 2011, 36° 36' 18.0" N, 97° 29' 6.0" W: Southern Great Plains Central Facility (C1). Compiled by R Coulter, J Prell, M Ritsche, and D Holdridge. ARM Data Archive: Oak Ridge, Tennessee, USA. Data set accessed 2011-04-13 at <http://dx.doi.org/10.5439/1021460>.

2. Single datastream, single site, multiple date ranges:

Atmospheric Radiation Measurement (ARM) Climate Research Facility. 1994, updated daily. Balloon-borne sounding system (SONDEWNPN). Oct. 2008–March 2008, Oct. 2009–March 2009, Oct. 2010–March 2011, 36° 36' 18.0" N, 97° 29' 6.0" W:

Atmospheric Radiation Measurement (ARM) Climate Research Facility. 1996, updated **yearly**. ARMBECLDRAD. **2011-01-01 to 2011-01-01, 71.323 N 156.609 W: North Slope Alaska (NSA) Central Facility, Barrow AK (C1)**. Compiled by R. McCoy and S. Xie. Atmospheric Radiation Measurement (ARM) Climate Research Facility Data Archive: Oak Ridge, Tennessee, USA. Data set accessed **2013-10-30** at <http://dx.doi.org/10.5439/1039927>

4. Single datastream, single site, single data range, specific measurement extracted:

Atmospheric Radiation Measurement (ARM) Climate Research Facility. 1994, updated daily. Balloon-borne sounding system (SONDEWNPN). Oct. 2010–March 2011, 36° 36' 18.0" N, 97° 29' 6.0" W: Southern Great Plains Central Facility (C1), relative humidity. Compiled by R Coulter, J Prell, M Ritsche, and D Holdridge. ARM Data Archive: Oak Ridge, Tennessee, USA. Data set accessed 2011-04-13 at <http://dx.doi.org/10.5439/1021460>.

Alternate Format

If, for some reason, it is necessary to cite the datastream editors/compiler as the author, the following format is recommended:

Coulter, Richard, Jenni Prell, Michael Ritsche, and Donna Holdridge. 1994, updated daily. Balloon-borne sounding system (SONDEWNPN). Oct 2010–March 2011, 36° 36' 18.0" N, 97° 29' 6.0" W: Southern Great Plains Central Facility (C1). Atmospheric Radiation Measurement (ARM) Climate Research Facility Data Archive: Oak Ridge, Tennessee, USA. Data set accessed 2011-04-13 at <http://dx.doi.org/10.5439/1021460>.

How Do I Submit a Research Highlight?

Research Highlights are an efficient way to exchange results with your colleagues. They're used in annual reports and other high-level documents, as well as in program reviews and outreach materials.

<http://asr.science.energy.gov>



To access the Research Highlights Submittal Form:

1. On the ASR website, click **Science**.
2. Click **Research Highlights**.
3. Click **Submit a Highlight**.

How Do I Submit a Research Highlight?

Select or submit up to two associated publications.

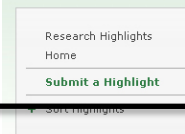
Select your area of research and ASR working group.

Enter the title and use the Look Up button to select up to two contacts.

Enter the Introduction, Main Discussion, and Conclusion.

You can enter up to two images with captions, but they are not required.

<http://asr.science.energy.gov/publications/db/submit>



Research Highlights
Home
Submit a Highlight
Sort Highlights

Research Highlight Submittal Form

Tell us about your research! This form is designed to collect summary information about working group research results. If you have any questions or comments, please contact the [administrators](#).

Journal or Book Reference(s) (if applicable): [Look Up](#)

Your reference from the Publications Database. Limit two references.

Area of Research:

Working Group:

(To select more than one, shift+enter.)

Title of Highlight:

(There is a 95 character limit.)

Who is submitting this highlight? [Look Up](#)

(Limit two contacts; contributors will be visible in the journal reference.)

Please limit the total of your introduction, main discussion, and conclusion to 5000 characters (this includes blank/white spaces). If you would like to include scientific characters or any other special characters, please use the [ISO 8859-1 standard](#) for HTML conversion or spell it out. For assistance with characters conversion, contact the [administrators](#).

Introduction:

Main Discussion:

Conclusion:

Images: (optional)

Only images in JPEG, BMP, GIF, or PNG can be accepted up to **10 Mb**. The image caption is limited to 500 characters.

Read the ["Tips and Tricks"](#) before uploading multiple images to Research Highlights.

[Browse...](#) Image Caption:

[Browse...](#) Image Caption:

[Submit](#)

[Reset](#)

How Do I Submit a Field Campaign Request?

- First, review the [guidelines](#) for submitting proposals.
- Next, [submit a preproposal](#); a short summary of the proposed campaign.
- Wait for a response from the Infrastructure Management Board (IMB) and/or [ARM Science Board](#).
- A full proposal or science plan may be requested.

The screenshot displays the ARM (Atmospheric Research and Measurement) website's 'Submit a Campaign: Preproposal Form'. The page is titled 'ARM CLIMATE RESEARCH FACILITY' and includes navigation links for About, Science, Campaigns, Sites, Instruments, Measurements, Data, News, Publications, and Education. The main content area is titled 'Submitting Proposals: Guidelines' and provides information on how to submit a preproposal, including a 'Process Overview' section. To the right, there is a 'Submit a Campaign: Preproposal Form' section with various input fields and checkboxes. The form includes sections for 'Campaign Information', 'ARM Site Designation', 'ARM Resources Requested', and 'Already?'. The 'ARM Site Designation' section lists various ARM sites and their locations. The 'ARM Resources Requested' section includes a table for requesting resources. The 'Already?' section has a checkbox for 'Already?'. The form also includes a 'Submit' button and a 'Cancel' button.

How Do I Stay Connected?

- ARM News Center

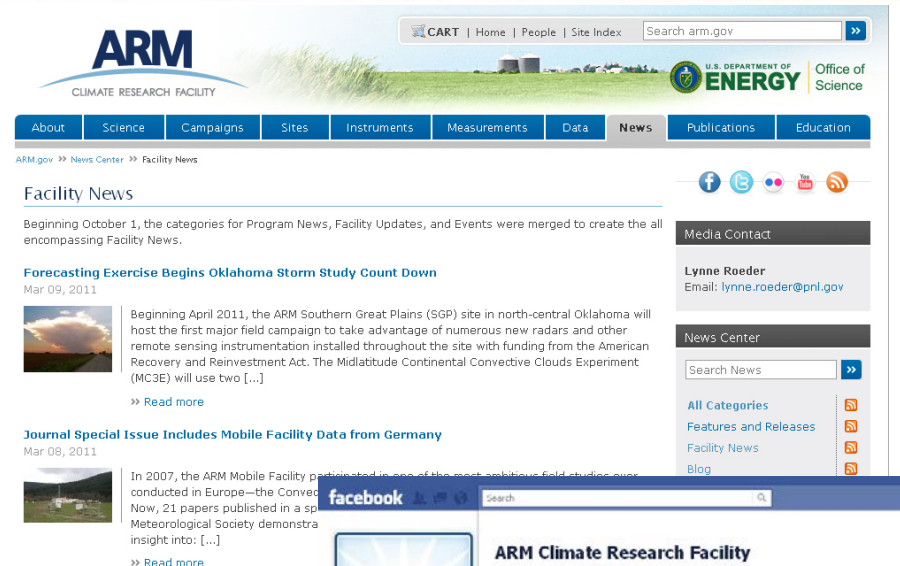
<http://www.arm.gov/news/>

- Facebook

<http://www.facebook.com/arm.gov>

- Twitter

<http://twitter.com/armnewsteam>



armnewsteam

Beautiful pictures from site of upcoming AMIE-Gan campaign posted on Flickr. Palm trees, blue sky, blue sea. <http://ow.ly/4kZDX>

about 20 hours ago via HootSuite

Blog update: Not Your Typical 3D Movie - Now that ARM's new X-band scanning precipitation radars are up and running ... <http://ow.ly/1bRN5w>

11:30 AM Mar 21st via HootSuite

Videos show new 3D tools under development for studying #cloud evolution and #climate modeling. <http://1.usa.gov/ei7jlk>

10:22 AM Mar 21st via HootSuite

Oh! Props to @Cyclogenesis_au - and @RecoveryDotGov - for the radar photo in the Science article: <http://scim.ag/fsaoQd>

2:44 PM Mar 18th via HootSuite

We're in the #climate crosshairs. RT @sciencemagazine US Science funding-Cuts would close DOE Biology program <http://scim.ag/fsaoQd>

10:39 AM Mar 18th via HootSuite



View all...

RSS feed of armnewsteam's tweets

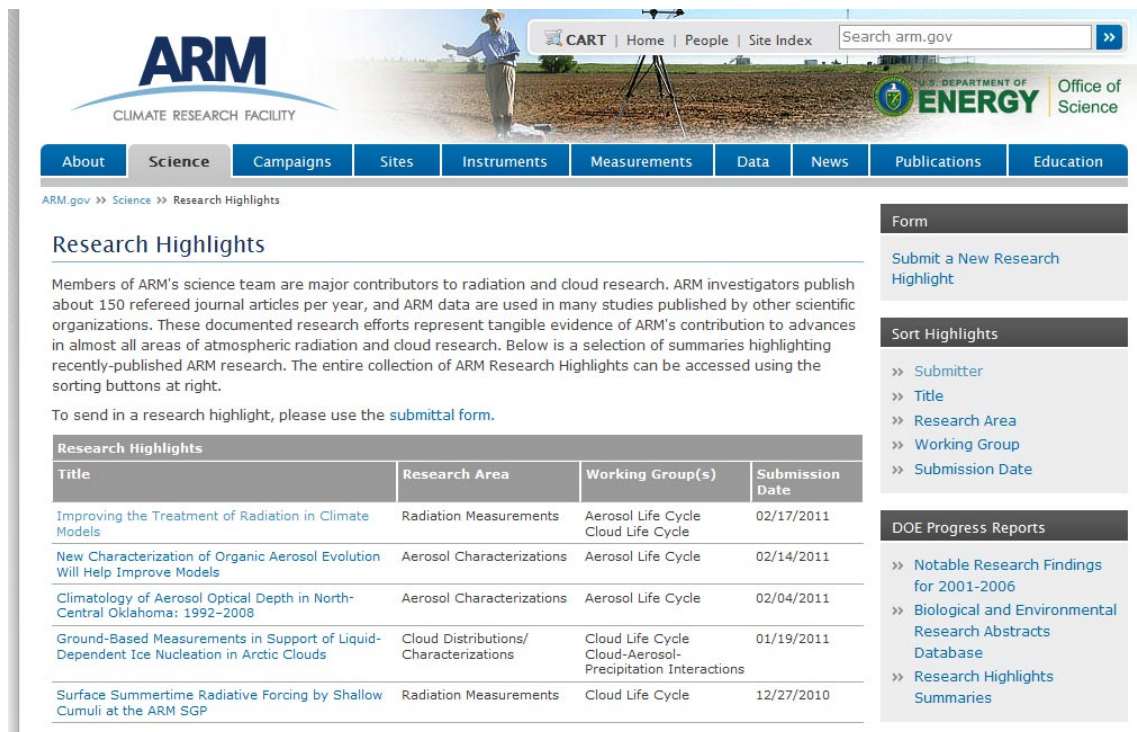
U.S. DEPARTMENT OF **ENERGY** Office of Science



How Do I Stay Connected?

- Research Highlights

<http://www.arm.gov/news/research> or
<http://www.arm.gov/science/highlights>



The screenshot shows the ARM Climate Research Facility website. The header includes the ARM logo, navigation links (CART, Home, People, Site Index), a search bar, and the U.S. Department of Energy Office of Science logo. The main navigation bar has tabs for About, Science, Campaigns, Sites, Instruments, Measurements, Data, News, Publications, and Education. The Science tab is selected, leading to the Research Highlights page.

Research Highlights

Members of ARM's science team are major contributors to radiation and cloud research. ARM investigators publish about 150 refereed journal articles per year, and ARM data are used in many studies published by other scientific organizations. These documented research efforts represent tangible evidence of ARM's contribution to advances in almost all areas of atmospheric radiation and cloud research. Below is a selection of summaries highlighting recently-published ARM research. The entire collection of ARM Research Highlights can be accessed using the sorting buttons at right.

To send in a research highlight, please use the [submittal form](#).

Research Highlights			
Title	Research Area	Working Group(s)	Submission Date
Improving the Treatment of Radiation in Climate Models	Radiation Measurements	Aerosol Life Cycle Cloud Life Cycle	02/17/2011
New Characterization of Organic Aerosol Evolution Will Help Improve Models	Aerosol Characterizations	Aerosol Life Cycle	02/14/2011
Climatology of Aerosol Optical Depth in North-Central Oklahoma: 1992-2008	Aerosol Characterizations	Aerosol Life Cycle	02/04/2011
Ground-Based Measurements in Support of Liquid-Dependent Ice Nucleation in Arctic Clouds	Cloud Distributions/ Characterizations	Cloud Life Cycle Cloud-Aerosol- Precipitation Interactions	01/19/2011
Surface Summertime Radiative Forcing by Shallow Cumuli at the ARM SGP	Radiation Measurements	Cloud Life Cycle	12/27/2010

On the right side of the page, there are several interactive elements:

- Form**: Submit a New Research Highlight
- Sort Highlights**:
 - >> Submitter
 - >> Title
 - >> Research Area
 - >> Working Group
 - >> Submission Date
- DOE Progress Reports**:
 - >> Notable Research Findings for 2001-2006
 - >> Biological and Environmental Research Abstracts Database
 - >> Research Highlights Summaries

How Do I Submit a Question?

<http://www.arm.gov/>

- Data/instrument issue
 - Use comment box on their web pages
- General questions
 - Go to Contacts page, linked off of every web page

The image shows two screenshots of the ARM Climate Research Facility website. The top screenshot is the 'Instrument: X-band Scanning ARM Precipitation Radar (XSAPR)' page. It features a navigation bar with links like 'About', 'Science', 'Campaigns', 'Sites', 'Instruments', 'Measurements', 'Data', 'News', 'Publications', and 'Education'. The main content area includes a 'General Overview' section, a 'Picture of the X-band scanning ARM precipitation radar', and a 'Comments?' box on the right. The bottom screenshot is the 'Contact(s)' page, which lists contact information for Nitin Bharadwaj, Kevin Widener, and Scott Collis. A 'Send comments' button is highlighted in a blue box, with an arrow pointing to a 'Comments and Questions' page. This page has a 'Comments and Questions' section with a form for submitting comments, data quality reports, or abuse reports. The 'Comments?' box on the right of this page is also highlighted in a blue box.

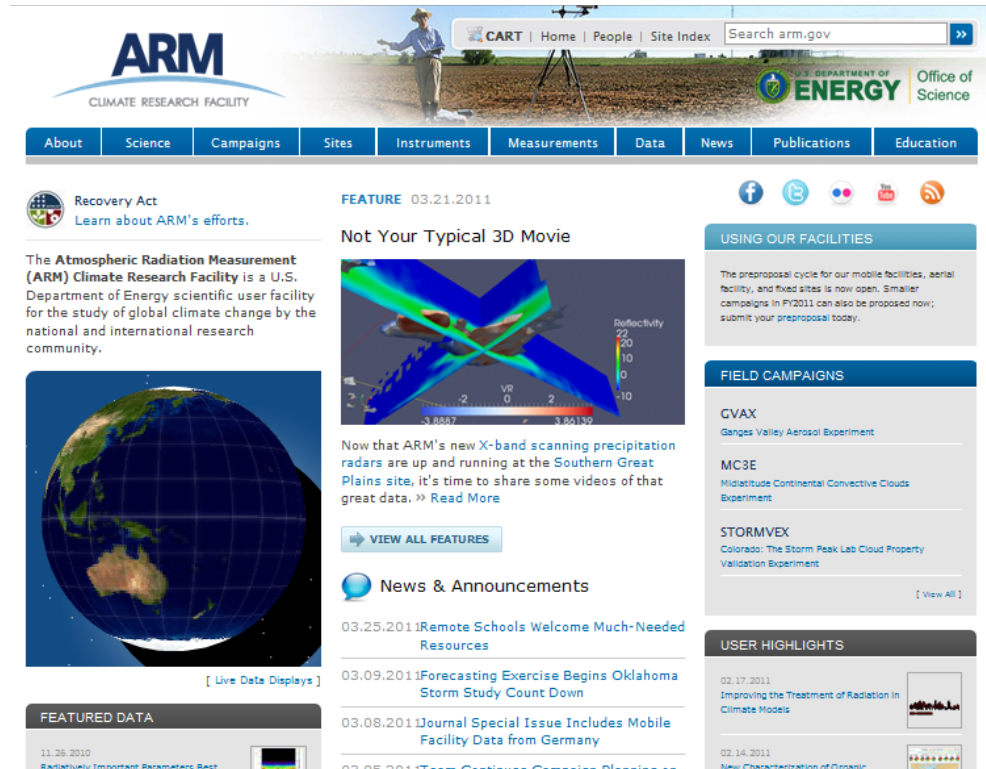
For More Information on ARM

- Description of sites, instruments, data
- Upcoming campaigns
- Science highlights
- ARM News (subscribe to RSS feed)
- Wiki pages
- Provide Feedback
- Contacts

Visit the ARM website:

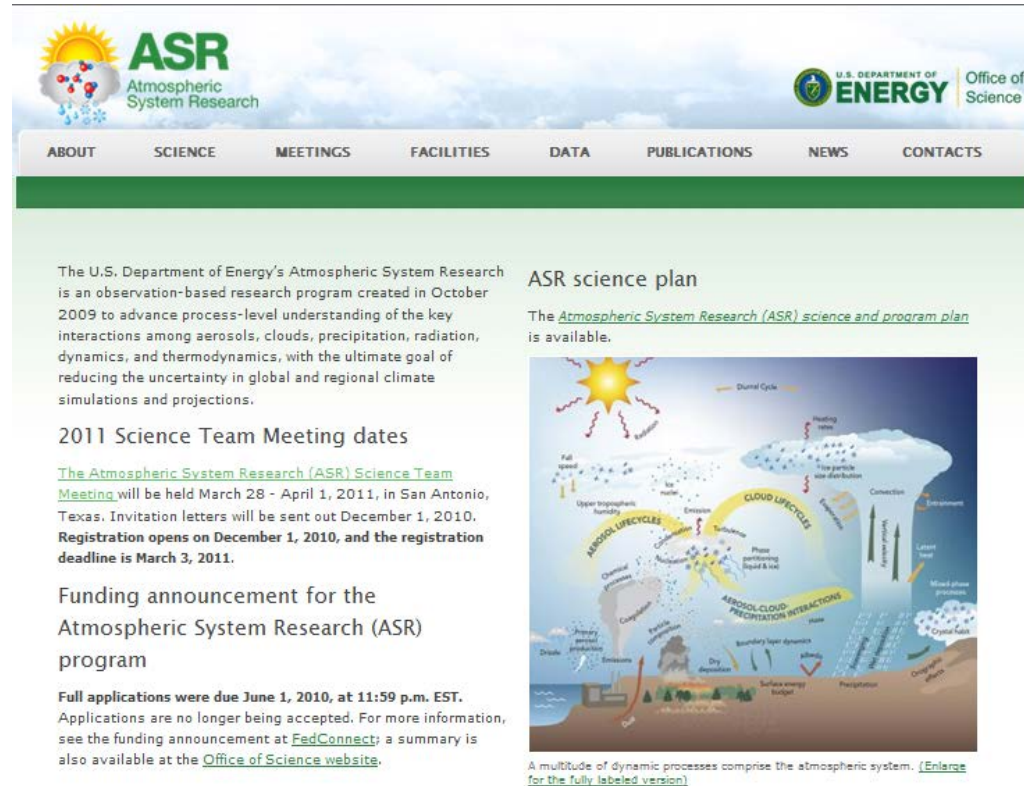
<http://www.arm.gov>

Or visit us on Facebook, Twitter, or YouTube



For More Information on ASR

- Description of program goals
- Description of working groups
- Science highlights
- Meeting information
- Links to ARM resources
- Contacts



The screenshot shows the ASR website with a navigation bar containing links: ABOUT, SCIENCE, MEETINGS, FACILITIES, DATA, PUBLICATIONS, NEWS, and CONTACTS. The main content area includes a description of the ASR program, meeting dates for 2011, and funding information. A diagram on the right illustrates the ASR science plan, showing the interactions between aerosols, clouds, and precipitation.

ASR
Atmospheric System Research

U.S. DEPARTMENT OF **ENERGY** | Office of Science

ABOUT SCIENCE MEETINGS FACILITIES DATA PUBLICATIONS NEWS CONTACTS

The U.S. Department of Energy's Atmospheric System Research is an observation-based research program created in October 2009 to advance process-level understanding of the key interactions among aerosols, clouds, precipitation, radiation, dynamics, and thermodynamics, with the ultimate goal of reducing the uncertainty in global and regional climate simulations and projections.

2011 Science Team Meeting dates

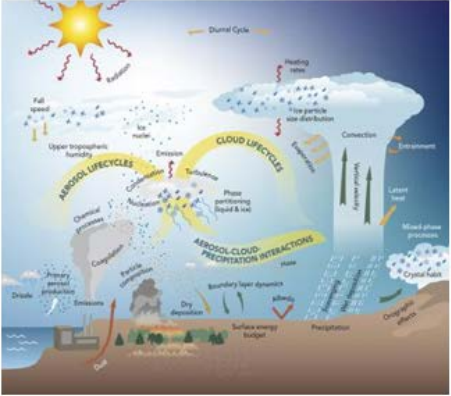
The Atmospheric System Research (ASR) Science Team Meeting will be held March 28 - April 1, 2011, in San Antonio, Texas. Invitation letters will be sent out December 1, 2010. Registration opens on December 1, 2010, and the registration deadline is March 3, 2011.

Funding announcement for the Atmospheric System Research (ASR) program

Full applications were due June 1, 2010, at 11:59 p.m. EST. Applications are no longer being accepted. For more information, see the funding announcement at [FedConnect](#); a summary is also available at the [Office of Science website](#).

ASR science plan

The [Atmospheric System Research \(ASR\) science and program plan](#) is available.



A multitude of dynamic processes comprise the atmospheric system. [\[Enlarge for the fully labeled version\]](#)

Visit the ASR website:

<http://asr.science.energy.gov/>