

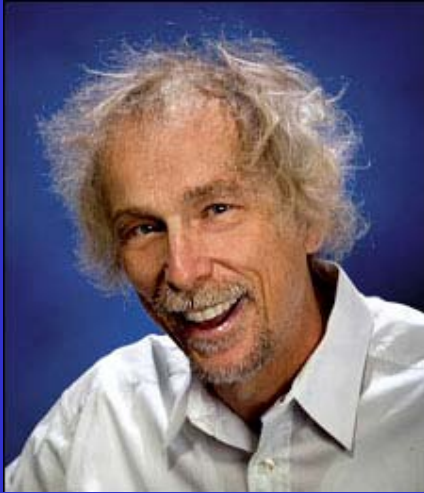


# Chief Scientist Report ARM Science Team Meeting 2009

Warren Wiscombe  
ARM Chief Scientist  
Brookhaven National Lab



# ARM Chief Scientist Team



Andy Vogelmann

Ric Cederwall



Yangang Liu

Sharon Zuhoski


Pavlos Kollias



[www.arm.gov/news](http://www.arm.gov/news) (get RSS feed)

ARM – About ARM: News, Events, Updates, Stories, Jobs

Address Book ▾ NOMAD2 LinkedIn GSFC Lib Resolve DOI NASA X.500 AMS Pubs AGU Pubs Google Scholar Search ▾

**ARM** 

[VIEW CART](#) | [PEOPLE](#) | [SITE INDEX](#) | [HOME](#) |  [SEARCH](#)


[ABOUT ARM](#) [ABOUT ACRF](#) [SCIENCE](#) [SITES](#) [INSTRUMENTS](#) [MEASUREMENTS](#) [DATA](#) [PUBLICATIONS](#) [EDUCATION](#) [FORMS](#)

[Acronyms/Glossary](#) [ARM Store](#) [Calendar](#) [Contacts](#) [Image Library](#) [News](#) [Program Participants](#)

## News Center - All Categories

### [Ceremony in the Azores Recognizes Scientific Collaborations](#)

Mar 27, 2009 [ [Feature Stories and Releases](#), [Program News](#) ]




In a signing ceremony at the Laboratório Regional Engenharia Civil in Ponta Delgada, the Azores, government officials from the United States and Portugal formally recognized agreements for scientific collaboration related to the ARM Mobile Facility deployment on Graciosa Island. The Mobile Facility will begin collecting data on the island starting in May. For more [...]


[Read more](#)


## Search News


[Search](#)

## News Center

[All Categories](#) 

[Program News](#) 


[Events](#) 

[Employment](#) 

Research Input Form

http://www.arm.gov/science/research/newrh.php

Address Book ▾ NOMAD2 LinkedIn GSFC Lib Resolve DOI NASA X.500 AMS Pubs AGU Pubs Go

**ARM**  [VIEW CART](#)

**ABOUT ARM** **ABOUT ACRF** **SCIENCE** **SITES** **INSTRUMENTS** **MEASUREMENTS** **DATA** **PUBLICAT**

**Key Science Questions** **Research Highlights** **Performance Metrics** **Science Team** **Working Gr**

## Research Highlight Submittal Form

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

**Contributors:**

**Area of Research:**

**Working Group:**

**Title of Highlight:**

**Journal or Book Reference(s)** (if applicable):

Your reference from the ARM Publications Database. Limit two references.

**ARM  
highlight  
entry  
form**

pub entry is  
simplified  
and  
modernized





# Poster Awards

10 CS Design Awards, announced Wed morning

*People's Choice Award:*

Please vote for the best poster you see.

Lobbying for your poster is discouraged.



# A brief sampler of ARM accomplishments

# Climate Modeling Best Estimate

Cloud fraction from ARM, CAM & GFDL models

ARM Cloud Parametrization & Modeling WG - home - SeaMonkey

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop [http://science.arm.gov/wg/cpm/scm/statistical\\_summaries.html](http://science.arm.gov/wg/cpm/scm/statistical_summaries.html)

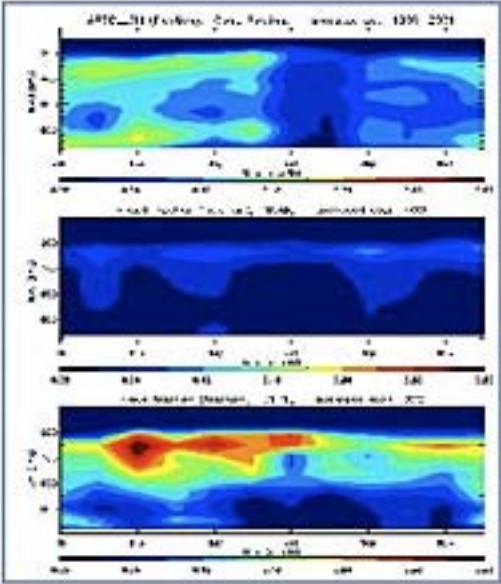
Home Bookmarks Red Hat, Inc. Red Hat Network Support Shop Products Training

## Statistical Summaries of ARM data for Climate Modelers

The ARM program collects unique data related to radiation, clouds, water vapor, and aerosols of great value to climate modelers. This web page provides a few sample analyses of multi-year data from the Southern Great Plains site with comparisons to climate model simulations for the same location.

### Seasonal Cycle at the Southern Great Plains

#### Cloud Fraction from the Cloud Radar



ARSL, CAM and GFDL Cloud Fraction

Explore the data yourself

Would you like to explore the data yourselves?

Browse the Dataset

[Quick look plots](#)

[Seasonal and diurnal cycle](#)

The dataset extends the following years: 1999 - 2001.

There is more data available including data for the satellite observations, surface sensible and latent heat fluxes, and surface meteorology.

Would you like to download the data for your own exploration?

The data used in the statistical summaries is from a 3 year analysis (1999-2001) which is



# CMBE website in Cloud Modeling WG website

## ARM Cloud Modeling WG

wgcm@arm.gov

[Home](#)

[Research](#)

[Data](#)

[Current Activity](#)

[Meetings](#)

[Publications](#)

[Contact Us](#)

### Best Estimate ARM Products for Climate Modelers

Variables:

tot\_cld - Total Cloud Fraction from ARSCL, narrow field of view [ ]  
tot\_cld\_tsi - Total Cloud Fraction from TSI, 100deg FOV [ ]  
swdn - Downwelling Shortwave Hemispheric Irradiance [W/m2]  
swdif - Downwelling Shortwave Diffuse Hemispheric Irradiance [W/m2]  
swdir - Direct Shortwave Irradiance [W/m2]  
swup - Upwelling Shortwave Hemispheric Irradiance [W/m2]  
lwdn - Downwelling Longwave Hemispheric Irradiance [W/m2]  
lwup - Upwelling (10 meter) Longwave Hemispheric Irradiance [W/m2]  
pwv - Precipitable Water Vapor [cm]  
lwp - Liquid Water Path [g/m2]

Method:

variable  
stdev - standard deviation  
qc - data quality control

Site:

SGP C1  
NSA C1  
TWP C3  
TWP C2  
TWP C1

Year:

2002  
2003  
2004  
2005  
2006  
2007

Month:

whole year  
01  
02  
03  
04  
05

Go





# Retrospective on Mobile Facility deployments, Thu morning

2005: Pt. Reyes, California

2006: Niamey, Niger

2007: Black Forest, Germany

2008: Shouxian, China

2009-10: Graciosa Island, Azores



*We've come a long way from Pt. Reyes...*



# ...to China, 2008







# ARM Mobile Facility - China, 2008



# Mobile Facility now being set up on Graciosa Island, Azores, 2009





# Graciosa, AMF site



# Graciosa, town & harbor







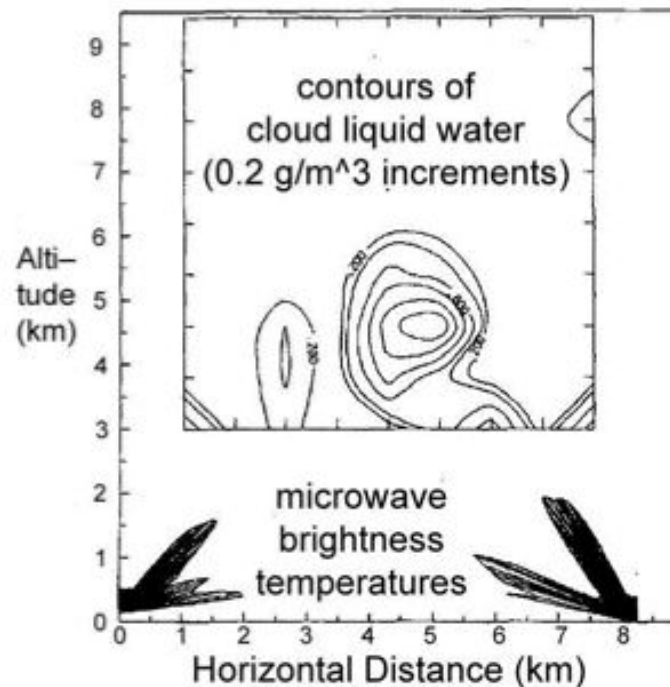
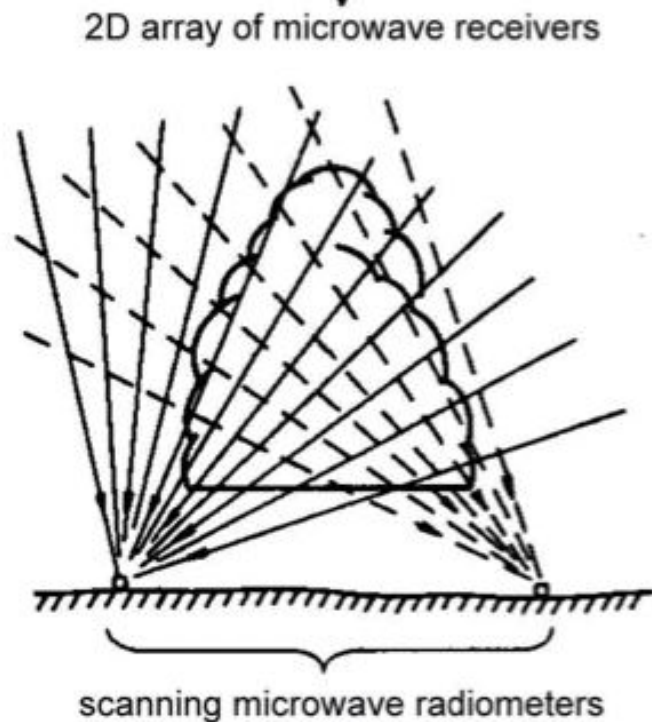
# RACORO is pioneering routine cloud flights (SGP area, Jan-Jun 2009)



# RACORO, first flight



# Cloud tomography IOP in May at SGP







# A brief sampler of what lies ahead

# RHUBC-II at 5.4 km in Chile, Fall 2009



# RHUBC-II at 5.4 km in Chile, Fall 2009





# The 2nd Mobile Facility goes to Steamboat Springs in 2010



**Steamboat Gondola Lodge**

Photograph by [dmcquirk](#)





where it will sit just below Storm Peak Lab





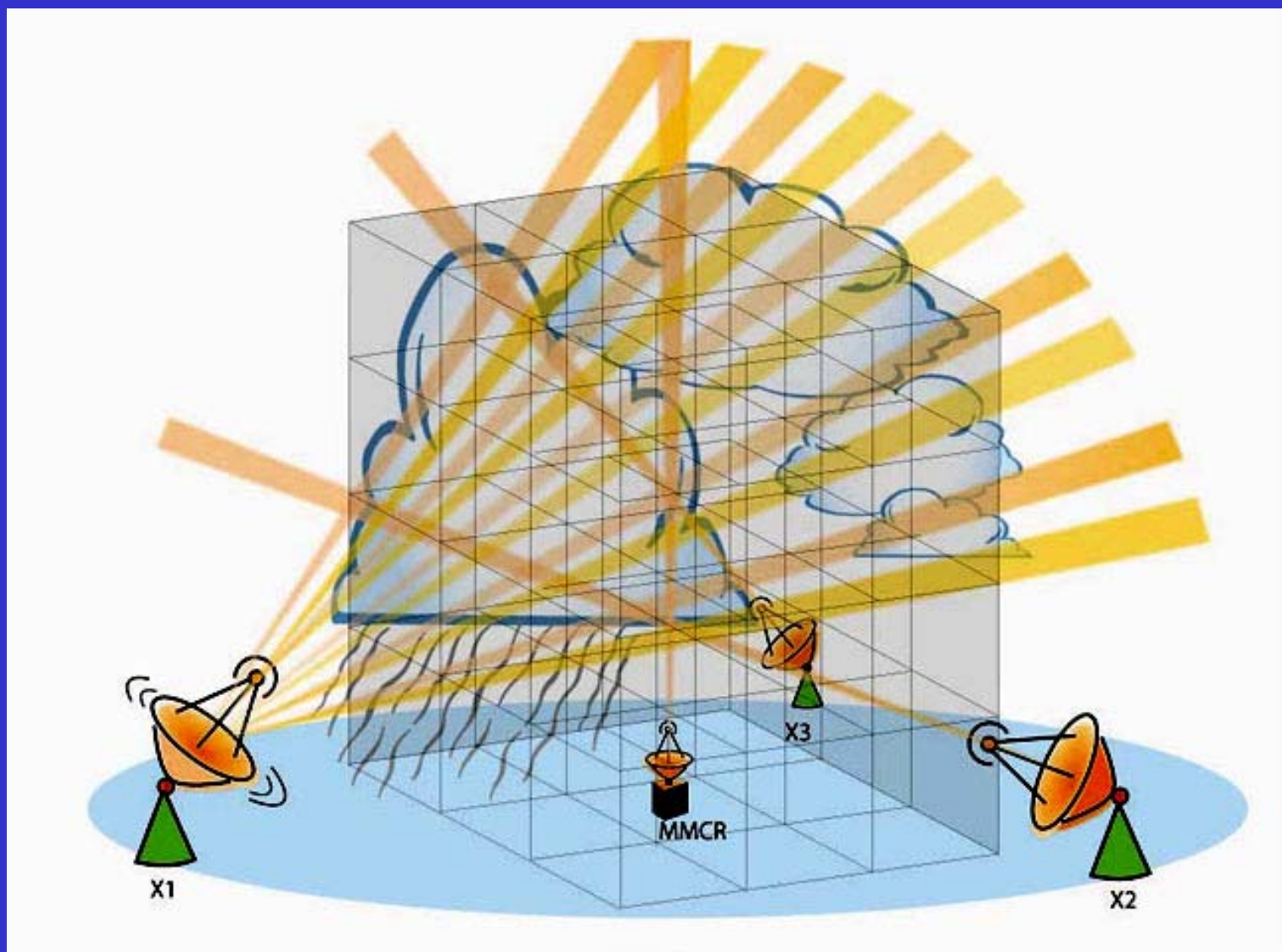


We will fly tethered balloons at  
Oliktok Point, Alaska, for ALTOS

and someday maybe small UAVs



# ARM scanning radars will be more than cartoons in the future





# Special sessions on effect of stimulus purchases on ARM, Plenary Room

- Wed 2-3: Effect on Science Plan
- Wed 3-4: Effect on data products
- not a required activity!