ARM Climate Research Facility Fixed Sites

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1st GRUAN Implementation-Coordination Meeting
Session 4: Site Reports
ACRF Fixed Site and Mobile Facility Deployment Locations

ARM Climate Research Facility (ACRF) Sites

Legend:
- ACRF Site
- ARM Mobile Facility
- ARM Off Site Campaign
- World Countries

Date: October, 2007
Source: ACRF GIS

Argonne National Laboratory
ACRF Fixed Site Locations
Southern Great Plains
Smaller ARM SGP Site Footprint to Support Finer Grid-Scale Model Development and Validation

In an ARM requested modeling study performed by Dr. Shaocheng Xie, it was shown that reduction of sites for the SGP domain did not result in an increase of uncertainty in boundary layer parameters.

The ARRA funds are being used to add surface flux instrumentation that more than doubles the density of sites in the smaller SGP domain.
$60 M ARRA Funds for the ARM Climate Research Facility will Substantially Improve Climate Observations

Recovery Act funded instrumentation will be fully operational in FY 2011. This enhanced instrumentation suite will provide unparalleled research capabilities.

Approximately half the $60M will purchase 18 scanning radars that will provide three-dimensional characterization of clouds and precipitation.

These new measurements will greatly expand the set of scientific questions in climate change research that can be supported and reduce the uncertainty of the roles of clouds and aerosols in climate models.
Scanning Radars

WSR-88D (S)
CPOL
3*XPOL
W, Ka SCR

Mobile Facilities
AMF1: W, Ka SCR
AMF2: X, Ka SCR

CPOL
X, Ka SCR
WF100 (C)
What ARM is Doing

The ARM Sites are now part of the GCOS Reference Upper Air Network (GRUAN) and DOE, NOAA, NCDC, and GRUAN collaborated to:

→ Provide cryogenic frost point hygrometers launched with rawinsondes to provide more accurate measurements of relative humidity profiles in the upper troposphere and lower stratosphere at the ARM sites.

→ ARM will process all GRUAN sites rawinsonde data with ARM ingests, the GRUAN Lead Center will assess and add the error bars for those data, and NCDC will provide the archive for the GRUAN branded data.

Targeting the July-August time frame implementation
ACRF Climate Research Facility

A DOE/BER National User Facility for Climate Observations for Climate Research

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THANK YOU!