

Catalog of ARM External Data

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Introduction

The term “external data” refers to data generated outside the Atmospheric Radiation Measurement (ARM) Program that augments the ARM data. Data sets designated as ARM “external data” are collected by the ARM External Data Center (XDC). They are usually converted to either netCDF or HDF. These data are distributed by the ARM Archive and to the ARM Experiment Center.

External data is managed in a fashion similar to ARM data. The only exception is that for certain external data sets, the provider has specified that these only be distributed to members of the ARM Science Team and not be made available to the general scientific community.

The decisions on what external data sets are acquired is made by the ARM Program Office, with input provided by the ARM Science Team.

The current catalog of ARM external data is shown in Tables 1 through 6. More detail on these data streams is available at <http://www.xdc.arm.gov>.

Table 1. Southern Great Plains (SGP) external surface measurements.		
Data Stream Names	Discussion	Temporal Coverage
sgpabrfcpcpX1.c1	Arkansas-Red River Forecast Center (ABRFC) precipitation products on a 4-km grid. netCDF	Beginning 6/24/94, hr 15
sgpcsphotalmX1.00 sgpcshphotaotpwX1.00 sgpcsphotppX1.00 sgpcsphotsizeX1.00 sgpcshphotaotpwfiltX1.00	Cimel sunphotometer (CSPHOT) data. ASCII	Continuous since March 1998; also some earlier intensive observation periods (IOPs).
sgp60ksumesoX1.b1	Quality assured data from 16 stations in Kansas. The data are provided and quality assured by the High Plains Climate Center. netCDF	Beginning January 1993
sgp60nwssurfX1.a1	National Weather Service (NWS) hourly surface measurements. netCDF	1/93 - 6/96
sgp05okmX1.a1 sgp15okmX1.a1	<i>ARM Science Team only.</i> Quality assured surface measurements from 111 stations in Oklahoma. netCDF	Beginning 1994
sgpusdaradX1.00 sgpusdauvmfrsrX1.00	U.S. Department of Agriculture (USDA) UV-B network station - first file contains Multi-filter Rotating Shadowband Radiometer (MFRSR), temperature, humidity, downward looking photometer and broadband UVB; second file contains UV-MFRSR data. ASCII	Beginning 2/17/99
sgp60wpdnsurfX1.b1	Surface meteorology measurements at a subset of Wind Profiler Demonstration Network stations. netCDF	Beginning 1/21/94

Table 2. SGP satellite data.		
Data Stream Name	Description	Temporal Coverage
sgpgoes7rad8X1.a1 sgpgoes7radX1.a1 sgpgoes7visX1.a1 sgpgoes7irX1.a1 sgpgoes7ir8X1.a1	Includes both calibrated radiance fields as well as brightness temperatures for the infrared channels. Fields of the solar and satellite zenith angles, and sun-satellite azimuth angles are also included. HDF	7/17/94 - 4/6/95
sgpgoes8visX1.a1 sgpgoes8X1.a1	sgpgoes8visX1 contains the 1 km visible channel data, and ancillary fields. sgpgoes8X1 contains all five channels at 4-m resolution, together with the ancillary fields. The ancillary fields are the solar and satellite zenith angles, and sun-satellite azimuth angles. HDF	Beginning 12/16/94
sgpgoes8irgridX1.a1 sgpgoes8irlatlongX1.a1 sgpgoes8irriverriversX1.a1 sgpgoes8irstateX1.a1 sgpgoes8visgridX1.a1 sgpgoes8vislatlongX1.a1 sgpgoes8visriverriversX1.a1 sgpgoes8visstateX1.a1	Overlay files showing a latitude and longitude grid, state boundaries and the positions of the coastline and selected lakes and rivers. The overlay files consist of an "image" of value 1 everywhere, except at the positions of the features in which case the pixel value is zero. HDF	N/A
sgpavhrr9X1.a1 sgpavhrr9radX1.a1 sgpavhrr12X1.a1 sgpavhrr12radX1.a1 sgpavhrr14X1.a1 sgpavhrr14radX1.a1	Includes both calibrated radiance fields as well as brightness temperatures for the infrared channels. Fields of the solar and satellite zenith angles, and sun-satellite azimuth angles are also included. HDF	Beginning 7/1/94
sgpavhrrgridX1.a1 sgpavhrrlat-longX1.a1 sgpavhrrriverriversX1.a1 sgpavhrrstateX1.a1	Overlay files showing a latitude and longitude grid, state boundaries and the positions of the coastline and selected lakes and rivers. The overlay files consist of an "image" of value 1 everywhere, except at the positions of the features in which case the pixel value is zero. HDF	N/A
sgpgoes7minnisX1.c1 sgpgoes7minnis_acfX1.c1 sgpgoes8minnisX1.c1 sgpgoes8minnis_acfX1.c1	Cloud products derived from Geostationary Operational Environmental Satellite (GOES) data by Pat Minnis' group at the National Aeronautics and Space Administration (NASA) Langley. netCDF or ASCII format. The two products cover a 20 x 28, 0.5° grid and a 3 x 3, 0.3° grid.	4/94, 7/94, 10/94, 7/95, 10/95, 4/96, 6/97, 9/97, 1/98, 2/98, 4/98

Table 3. SGP upper air data sets.		
Data Stream	Description	Temporal Coverage
SgpacarsX1.a1	Transmissions from commercial aircraft of position, winds and temperature.	Begins 9/22/98
sgpgoeswaterX1.00 replaced by sggg8profX1.00	Soundings of dew point and temperature over the SGP Cloud and Radiation Testbed (CART) site derived from GOES-8 soundings by Wayne Feltz of the University of Wisconsin, Cooperative Institute of Mesoscale Meteorological Studies/Space Science and Engineering Center (CIMSS/SSEC). sggg8profX1.00 contain hourly retrievals; sgpgoeswaterX1.00 are 3 hour retrievals. ASCII	sgpgoeswaterX1: 8/1/96 - 9/30/97 sggg8profX1: 10/1/97 -
sgpnwsupaX1.a1	Soundings are twice daily. Data are only for mandatory levels. EBUFR	April 1993 - October 1998
sgp06snwsupaX1.00 sgp06snwsupaXabq.00 sgp06snwsupaXoun.00 sgp06snwsupaXtop.00	High-resolution (6-sec) quality assured data provided by verification of the origins of rotation in tornadoes experiment/Global Energy and Water Experiment (GEWEX) Continental-Scale International Project (VORTEX/GCIP) (Steve Williams at the National Center for Atmospheric Research [NCAR]). There are 12 sites covering the latitudes 31 to 40, longitudes -107 to -91. ASCII	12 stations: 4/1 - 4/29/94, 5/1 - 8/31/94, 4/1 - 9/30/95. Albuquerque, NM, Norman, OK, 4/96-8/97 Topeka, KS 4/96-5/97
sgp06wpdnmmtsX1.a1 sgp60wpdnwndsX1.b1	Wind Profiler Demonstration Network moments for the seven stations surrounding the SGP site and winds for all stations. netCDF.	Beginning 2/5/94 for mmts Beginning 1/21/94 for winds

Table 3. (contd)		
Data Stream	Description	Temporal Coverage
sgp60wpdnrassX1.b1	Hourly temperatures for the Wind Profiler Demonstration Network stations, which have Radio Acoustic Sounding System (RASS). netCDF.	Beginning 2/95
sgp30wpdngps.c1	The Forecast System Laboratory (FSL) provides 30-minute averages of precipitable water vapor derived from Global Positioning Systems (GPS). FSL provides 48 netCDF files per day. Converted to one netCDF files per day.	NetCDF: beginning 12/9/97. ASCII files for 9/26/95 - 11/01/95

Table 4. SGP external model data sets.		
Data Stream Names	Description	Temporal Coverage
sgpalleta90X1.00 sgpalleta48X1.00 sgpalleta32X1.00	National Centers for Environmental Prediction (NCEP) - Eta model - Grid size changes from 90 km to 48 km to 32 km. GRIB	90 km: 6/16/93-2/25/97 48 km: 3/14/97-2/8/97 32 km: 2/9/98-
sgpallruc60X1.c0 sgpruc60X1.c1 sgpallruc40hybrX1.00 sgpallruc40isobX1.00	The Rapid Update Cycle (RUC) model - Grid size changes from 60 km to 40 km. grid	60 km: NetCDF 5/8/96-4/23/98 60 km: GRIB 9/21/95-5/9/96 40 km: GRIB 12/4/98-
sgpecmwfX1.c1 sgpecmwfflxiiX1.00 sgpecmwfsfciiX1.00 sgpecmwfteniiX1.00 sgpecmwfvariiX1.00 sgpecmwfsfceiiX1.00 as of 1/98 ii=27,28,29	These data can only be distributed to ARM Scientists. Christian Jacob, European Center for Medium-Range Weather Forecasts (ECMWF) has supplied these data. ASCII	4/1-4/30/96, 5/1-5/10/96, 7/15-8/5/96, 4/17-5/7/95, 7/17-8/14/95, 9/22-11/1/95 Continuous since 8/96
sgpmoltsetaclass#X1.c1 sgpmoltседасclass#X1.c1 *nacmoltседасclass#X1.00 *nacmoltsetaclass#X1.00 #=0,1 *=North American Continent	NCEP -Model Output Location Time Series (MOLTS) data. BUFR	Begins 6/1/97

Table 5. North Slope of Alaska (NSA) external data sets.		
Data Stream Names	Description	Temporal Coverage
nsaacarsX1.a1	Transmissions from commercial aircraft of position, winds and temperature. netCDF	Continuous beginning 9/22/98
nsaavhriiX1.a1 shbavhriiX1.a1 nsaavhrradiiX1.a1 shbavhrradiiX1.a1 ii=10,11,12,14,15	Data supplied by the University of Alaska. Separate areas are covered for the NSA and SHB data streams. HDF	Continuous beginning 10/97 SHEBA 10/97-10/98
nsaavhriichjX1.a1.jpg ii= 12,14,15 j=2,4	Quick-look images (approximately hourly) supplied by the University of Alaska in near real-time. Full image is cropped to just cover the NSA area. JPG	Continuous beginning 9/25/97
nsaavhrrgridX1.00.hdf nsaavhrrcoastX1.00.hdf nsaavhrrlat-longX1.00.hdf	File 1: Overlay of latitude-longitude lines File 2: Overlay of coast lines File 3: Contains two images with the latitude and longitude of each pixel. HDF	N/A
nsaecmwfX1.c1 nsaecmwflx19X1.00 nsaecmwfsfc19X1.00 nsaecmwften19X1.00 nsaecmwfvar19X1.00 nsaecmwfsfce19X1.00 as of 1/98	<i>These data can only be distributed to ARM Scientists.</i> Products provided by Christian Jakob of ECMWF. ASCII	Continuous beginning 9/97
nsamoltsetaclass#X1.c1 nsamoltsedasclass#X1.c1 *nacmoltsedasclass#X1.00 *nacmoltsetaclass#X1.00 #=0,1 *=North American Continent	Model Output Location Time Series (MOLTS) Data are provided by NCEP. Stations north of 60° are included in this data stream. BUFR	Continuous beginning 6/97

Table 6. Tropical Western Pacific (TWP) external data sets.		
Data Stream Names	Description	Temporal Coverage
twpgms5X1.a1 twpgms5fullX1.00	Contains both infrared (IR) and visible channels. IR – 5 km resolution, visible averaged from 1.25 km to 5 km. At present, the image data extend only to about 12°N and 12°S. HDF	Beginning 10/5/96 plus 3/12/96-4/13/96 for Disco Cruise
twpgms5grid5x5X1.a1 twpgms5grid1x1X1.a1 twpgms5coastX1.a1	Overlay files showing a latitude and longitude grid and the positions of the coastline are available for the TWP 5-km resolution spatial coverage. The overlay files consist of an “image” of value 1 everywhere, except at the positions of the features (coastlines) in which case the pixel value is zero. HDF	N/A
twpncdcsurfX1.a1	Daily mean temperature, dew point, sea level and station pressure, visibility and wind speed; maximum sustained wind speed, wind gust, temperature; minimum temperature, precipitation. ASCII	Beginning 1/96
twptaobuoymetX1.00 twptaobuoytmpX1.00	twptaobuoymetX1.00 contains daily averaged wind at 4m, temperature and relative humidity at 3m and sea surface temperature at -1m. twptaobuoytmpX1.00 contains daily averaged temperatures at 11 depths: 1, 25, 50, 75,100, 125, 150, 200, 250, 300 and 500 meters. Daily averages are available in near real-time. ASCII	Beginning 6/6/96
Names to be determined	High-resolution radiation and meteorology data from the Tropical Atmosphere Ocean (TAO) Next Generation buoys located on the 165E line of the TAO Buoy Array. These radiation data have been obtained from TAO Array moorings through a collaborative effort between National Oceanic and Atmospheric Administration (NOAA)/Pacific Marine Environmental Laboratory (PMEL)/TAO and U.S. Department of Energy (DOE)/ARM. ASCII	Details on steady delivery of these files are still to be arranged.

Table 6. (contd)		
Data Stream Names	Description	Temporal Coverage
twp06snwsupaXhto.a1 twp06snwsupaXmkj.a1 twp06snwsupaXstu.a1 twp06snwsupaXtkk.a1 twp06snwsupaXtpn.a1 twp06snwsupaXtro.a1 twp06snwsupaXtya.a1 twp06snwsupaXwak.a1 twp06snwsupaXhli.a1	High-resolution (6-sec) automatic quality assured data provided by Steve Williams' group, NCAR. Stations are Hilo, Majuro, Pago Pago, Moen Island, Koror, Ponape, Yap Island, Wake Island and Lihue. ASCII	Approximately, 96/04 – 97/08
twpecmwfsuppX1.00 twpecmwfsurfX1.00 twpecmwfupaX1.00	<i>These data can only be distributed to ARM scientists.</i> Surface and diagnostic, supplementary and advanced upper air fields. Covers Latitude: 20N to -20S, Longitude: -80W to 110E. FM92 GRIB	Begins 10/96
twpecmwfX1.c1 twpecmwfllxiiX1.00 twpecmwfsciiX1.00 twpecmwfteiiX1.00 twpecmwfvariiX1.00 twpecmwfscfciX1.00 as of 1/98 ii=48, 49, 50	<i>These data can only be distributed to ARM scientists.</i> Products provided by Christian Jakob, ECMWF for three TWP domains. ASCII	Begins 6/97
twpwmoupaX1.a1	NCEP Upper Air observations collected from the Global Telecommunications System (GTS) with quality control added. The dataset includes 32 stations in the TWP. ASCII.	10/96-5/98