

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 below in Tables 1 through 5. More detail on these data streams is available at <http://www.xdc.arm.gov>.

Data Stream	Description	Temporal Coverage
sgpalleta90X1.00 sgpalleta48X1.00 sgpalleta32X1.00	National Centers for Environmental Prediction (NCEP) Model - Available in GRIB format. Grid size changes from 90 km to 48 km to 32 km.	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 sgpallruc40X1.00	The Rapid Update Cycle (RUC) analysis/forecast data analysis system. Grid size changes from 60 km to 40 km and analysis frequency changes from every 3 hours to hourly.	60 km GRIB: 05/08/96 - 60 km netCDF: 2/08/97 - 40 km GRIB: expected
sgpecmwfX1.c1 sgpecmwfllxiiX1.00 sgpecmwfsfciiX1.00 sgpecmwfteniiX1.00 sgpecmwfvariiX1.00 ii=27,28,29	Products from Christian Jakob European Centre for Medium-range Weather Forecasting (ECMWF) - more detail is available on the XDC Web page. Cover three domains. See Figure 1 for domain coverage. ASCII format.	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. Monthly: 9/96 - 12/97
*nacmoltsedasclass#X1.00 *nacmoltsetaclass#X1.00 #=0,1 *=North American Continent	Model Output Location Time Series (MOLTS) data are in BUFR format. The number of stations within the Southern Great Plains is still being decided. These data will be converted to netCDF.	Raw data begins 6/1/97

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 format.	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 format.	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 format.	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 format.	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 format.	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 Research Center. netCDF or ASCII format. The two products cover a 20x28, 0.5° grid and a 3x3, 0.3° grid.	4/94, 7/94, 10/94, 7/95, 10/95, 4/96

Table 3. SGP upper air data sets.		
Data Stream	Description	Temporal Coverage
sgpgoeswaterX1.00 replaced by sgg8profX1.00	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 (CIMSS)/Space Science and Engineering Center (SSEC). ASCII format; to be converted to netCDF. sgg8profX1.00 contain hourly retrievals; sgpgoeswaterX1.00 are 3 hour retrievals.	sgpgoeswaterX1: 8/1/96 - 9/30/97 sgg8profX1: 10/1/97 -
sgpnwsupaX1.a1	Soundings are twice daily. Data are only for mandatory levels. EBUFR format.	April 1993 - October 1997
sgp06snwsupaX1.00	High-resolution (6 sec) quality-assured data provided by verification of the origins of rotation in tornadoes experiment (VORTEX)/GEWEX Continental-Scale International Project (GCIP) (Steve Williams the at National Center for Atmospheric Research [NCAR]). There are 12 sites covering the latitudes 31 to 40, longitudes -107 to -91. ASCII format.	12 stations: 4/1 - 4/29/94, 5/1 - 8/31/94, 4/1 - 9/30/95. Albuquerque, NM, Norman, OK and Topeka, KS 4/1 - 9/30/96
sgp06wpdnmmtsX1.a1 sgp60wpdnwndsX1.b1	Wind Profiler Demonstration Network moments for the seven stations surrounding the SGP site and winds for all stations. netCDF format.	Beginning 2/5/94 for mmts Beginning 1/21/94 for winds
sgp60wpdnrassX1.b1	Hourly temperatures for the Wind Profiler Demonstration Network stations that have the RadioAcoustic Sounding System (RASS). netCDF format.	Beginning 2/95
sgp30wpdngps.c1	Forecast Systems 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 data began on 12/20/95. ASCII files for 9/26/95 - 11/01/95 Converted to one netCDF file per day beginning 12/9/97.

Data Stream	Description	Temporal Coverage
twpecmwfsurfX1.00 twpecmwfupaX1.00 twpecmwfsuppX1.00	Surface and diagnostic fields, supplementary fields and advanced upper air fields. Covers latitude: 20N to -20S, longitude: -80W to 110E. FM92 GRIB format.	10/1/96 - 9/30/97
twpecmwfllxiiX1.00 twpecmwfsciiX1.00 twpecmwfteiiX1.00 twpecmwfvariiX1.00 ii=48, 49, 50	Products provided by Christian Jakob, ECMWF - more detail is available on the XDC Web page. Covers three domains. See Figure 2 for domain coverage. ASCII format.	6/97 - 12/97
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 format.	Beginning 1/96
twptaobuoyX1.00	Daily and hourly averaged wind, current, temperature and humidity; data from current meter moorings; data from island wind stations. Hourly data are available when moorings are recovered and redeployed at roughly 6-month intervals. Daily averages are available in near real-time. ASCII format.	Beginning 6/6/96
twp06snwsupaX1.00	6 second resolution soundings, provided by NCAR.	
twpncepupaX1.00	NCEP Upper Air observations collected from the Global Telecommunications System (GTS) with quality control added. The data set includes 32 stations in the TWP. ASCII format.	4/96 - 10/96

Data Stream	Description	Temporal Coverage
NSAecmwfX1.c1 NSAecmwfllx19X1.00 NSAecmwfsc19X1.00 NSAecmwfte19X1.00 NSAecmwfvar19X1.00	Products provided by Christian Jakob, ECMWF - more detail is available on the XDC Web page. Data coverage is for one grid point (203.20, 71.05). ASCII format.	9/97 - 12/97
*nacmoltsetasclass#X1.00 *nacmoltsetaclass#X1.00 #=0,1 *=North American Continent	MOLTS data are provided by NCEP in BUFR format. Stations north of 60° will be included in the NSA subset.	6/97 -
nsa06snwsupaXbrw.a1 nsa06snwsupaXfai.a1	High-resolution (6 sec) quality-assured data are provided by Steve Williams' group at NCAR. Stations are Barrow and Fairbanks. ASCII files in CLASS sounding format.	4/96 - 9/96
NsaavhrrX1.00	Data provided by University of Alaska. Will be converted to HDF.	10/97 -

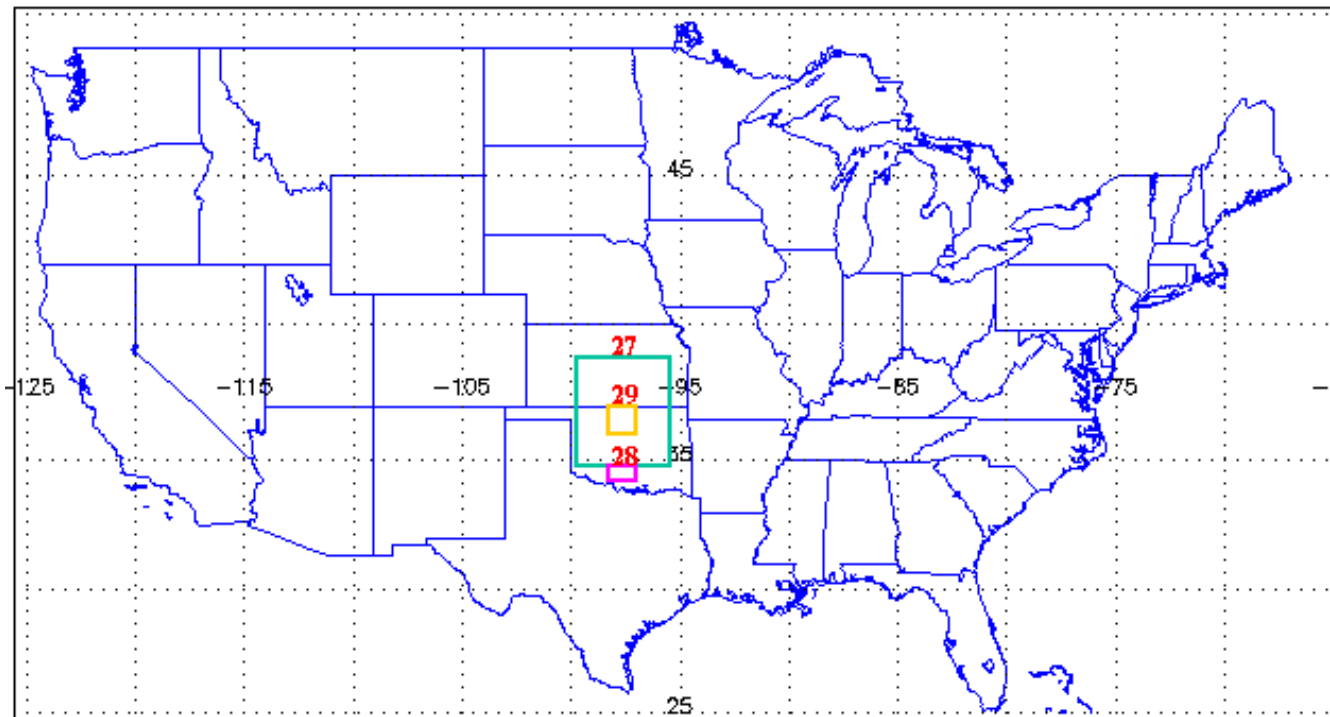


Figure 1. Three domains of Jakob's SGP ECMWF products. (For a color version of this figure, please see http://www.arm.gov/docs/documents/technical/conf_9803/tichler-98.pdf.)

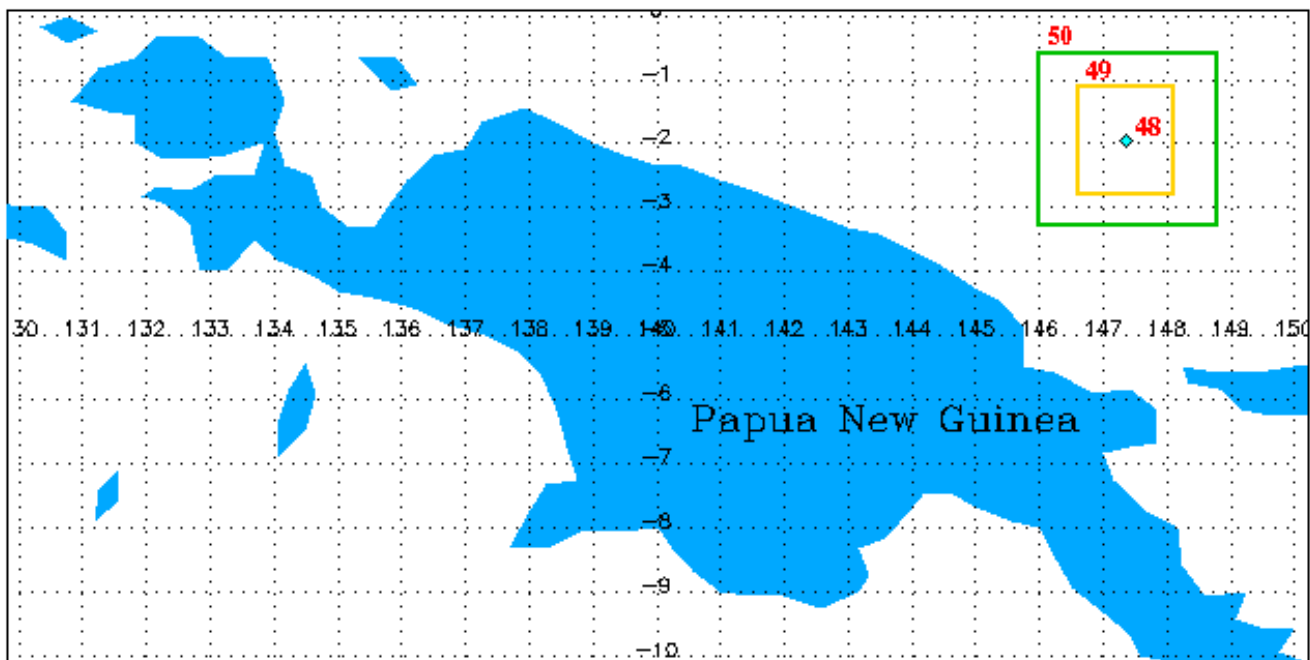


Figure 2. Three domains of Jakob's TWP ECMWF products. (For a color version of this figure, please see http://www.arm.gov/docs/documents/technical/conf_9803/tichler-98.pdf.)