

The OSU AMPS Database: A Portal for Antarctic Science and Operations

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Byrd Polar Research Center

Polar Meteorology Group

The Ohio State University





Goals for AMPS Database at OSU

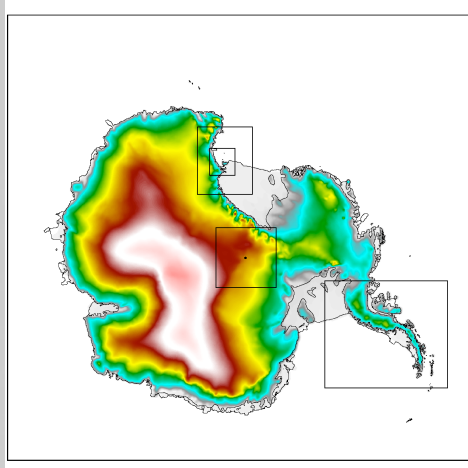
- ❖ To provide an easily accessible subset of AMPS output
 - Focuses on most frequently used variables
 - Approximates observed conditions
- ❖ Data in NetCDF format
- ❖ Compute monthly means for selected variables
- ❖ Will provide support for additional processing as a result of user requests



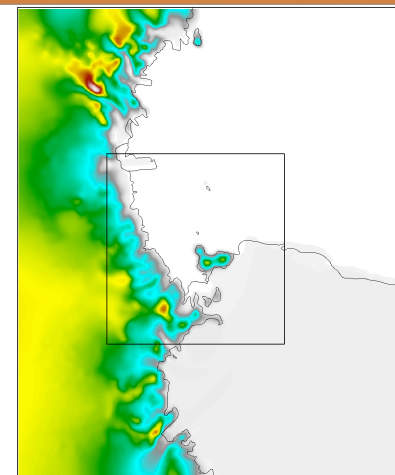
AMPS Database at OSU

- ❑ Two 12-core processors
- ❑ Memory: 128 GB of RAM
- ❑ Supports up to 48 TB of data storage (currently 18 TB)
- ❑ PMG has copied AMPS daily 00 UTC analysis and forecast grib outputs for domains 2 to 6 (2008/11 configurations) from 2008/11 to 2012/12
- ❑ Will process earlier data (2006-2008) and 2013 forward
- ❑ Intent to keep “near-real time” (about 1 month lag) update

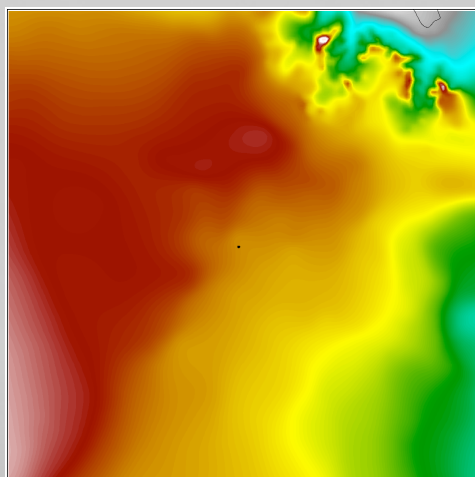
AMPS Domains (D2-D6) Model Resolutions and Dimensions (2008/11-2013/01)



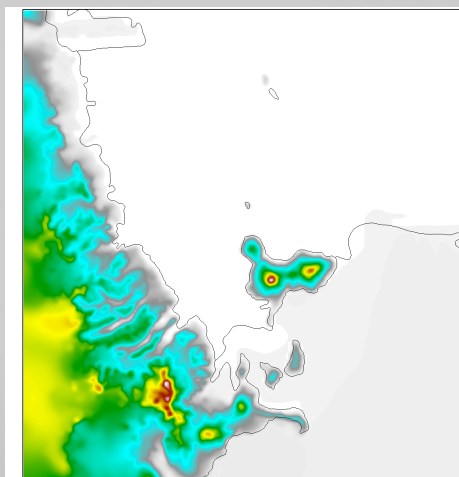
Domain 2, 15-km
442x418



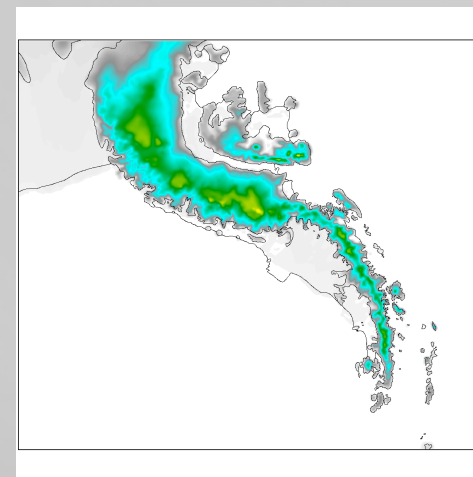
Domain 3, 5-km
157x190



Domain 4, 5-km
169x169

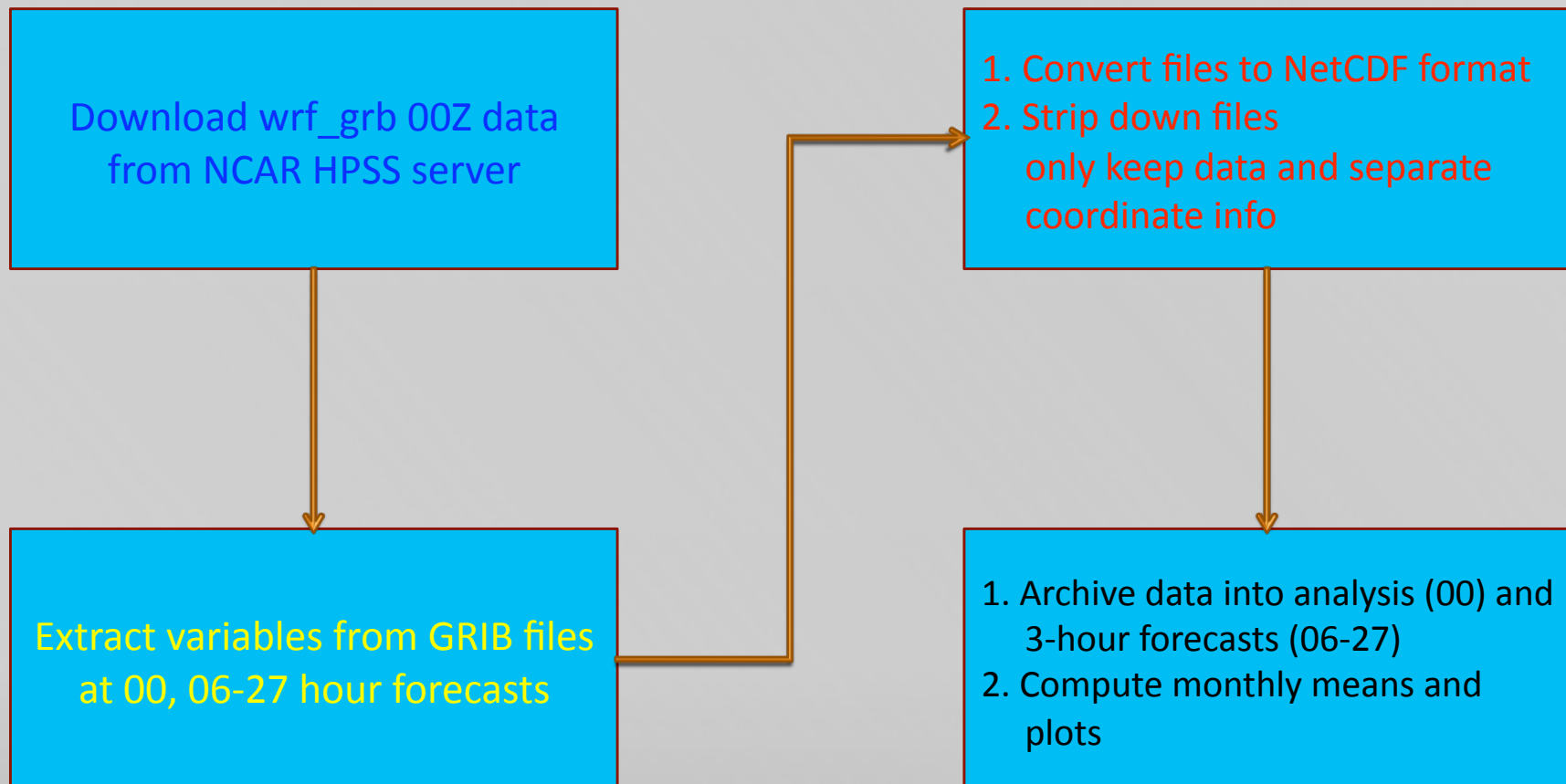


Domain 5, 1.67-km
214x229



Domain 6, 5-km
346x301

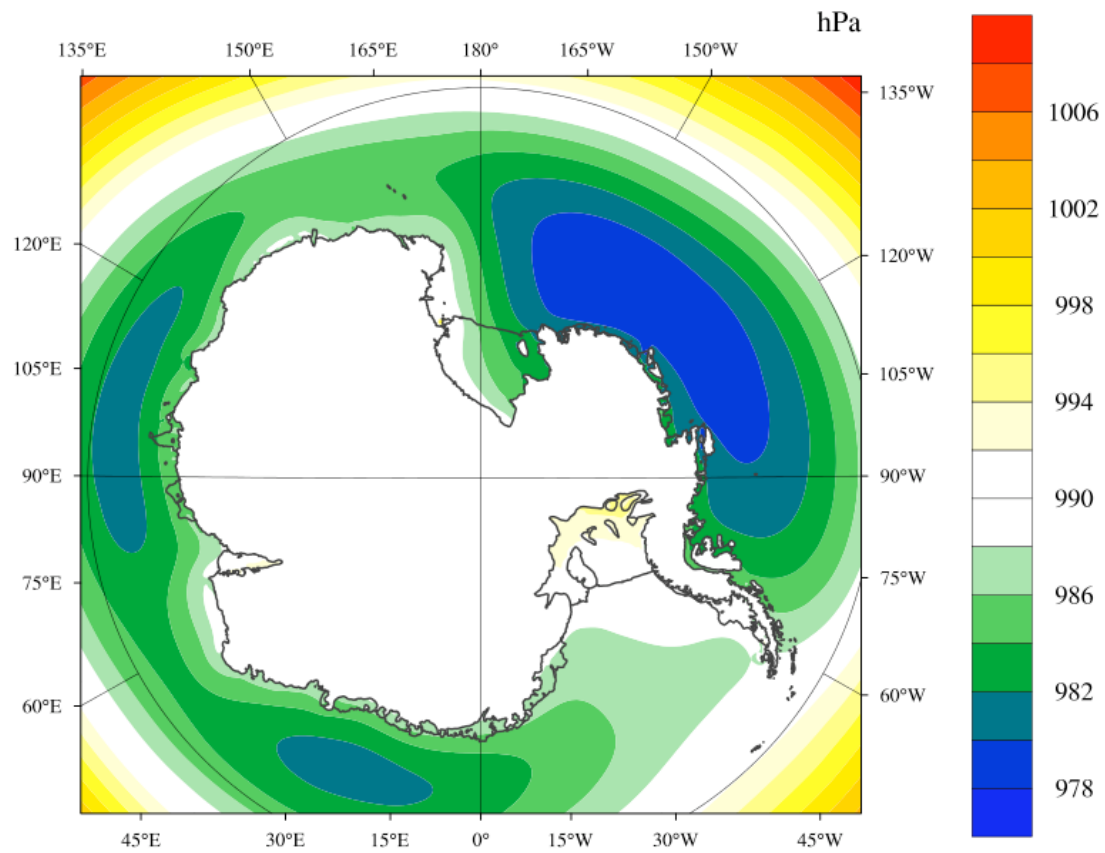
AMPS Database at OSU (processing flow)



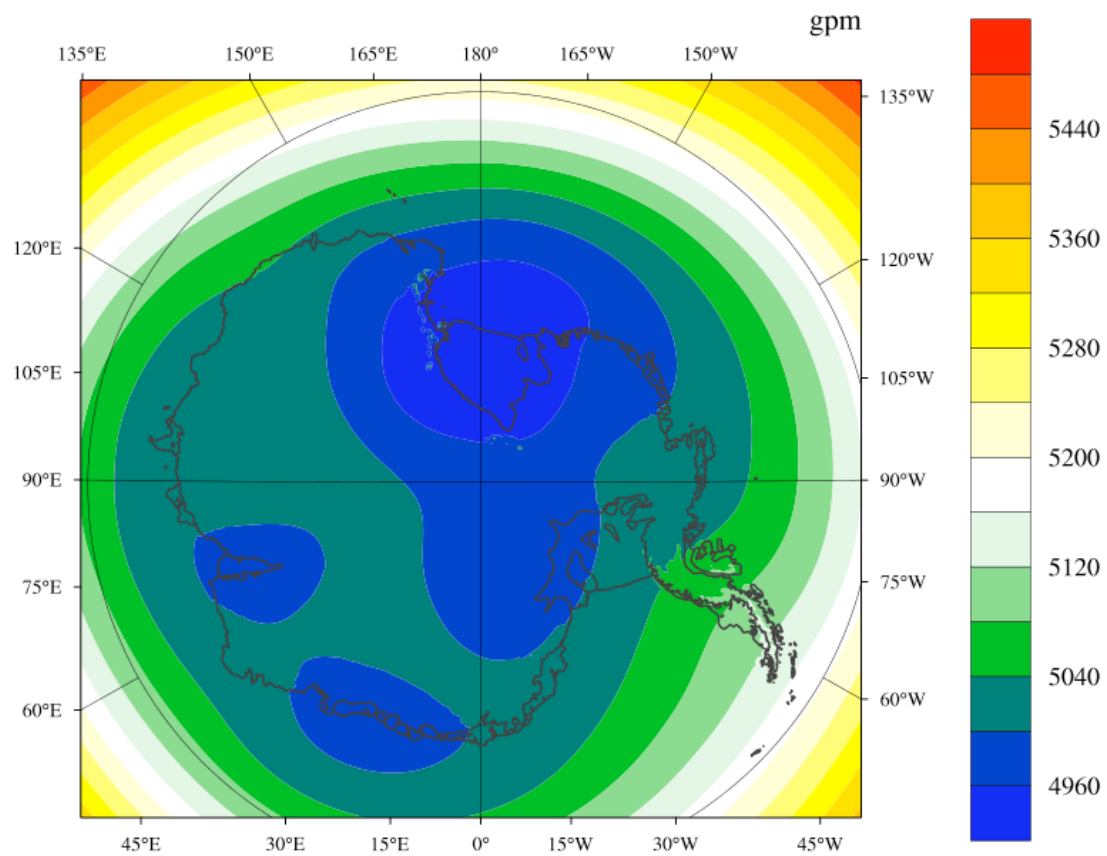


Illustrative uses of the OSU AMPS Database

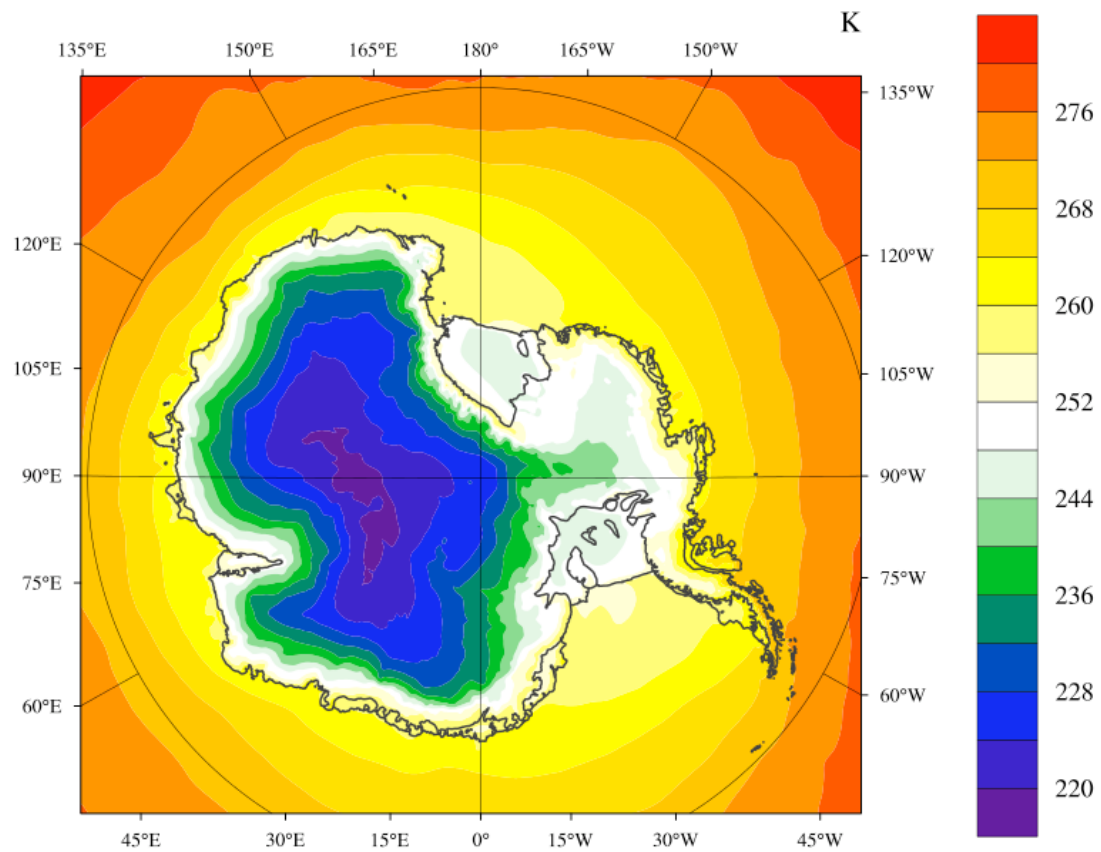
Annual Mean (2009-2012) Sea Level Pressure (SLP) (hPa)



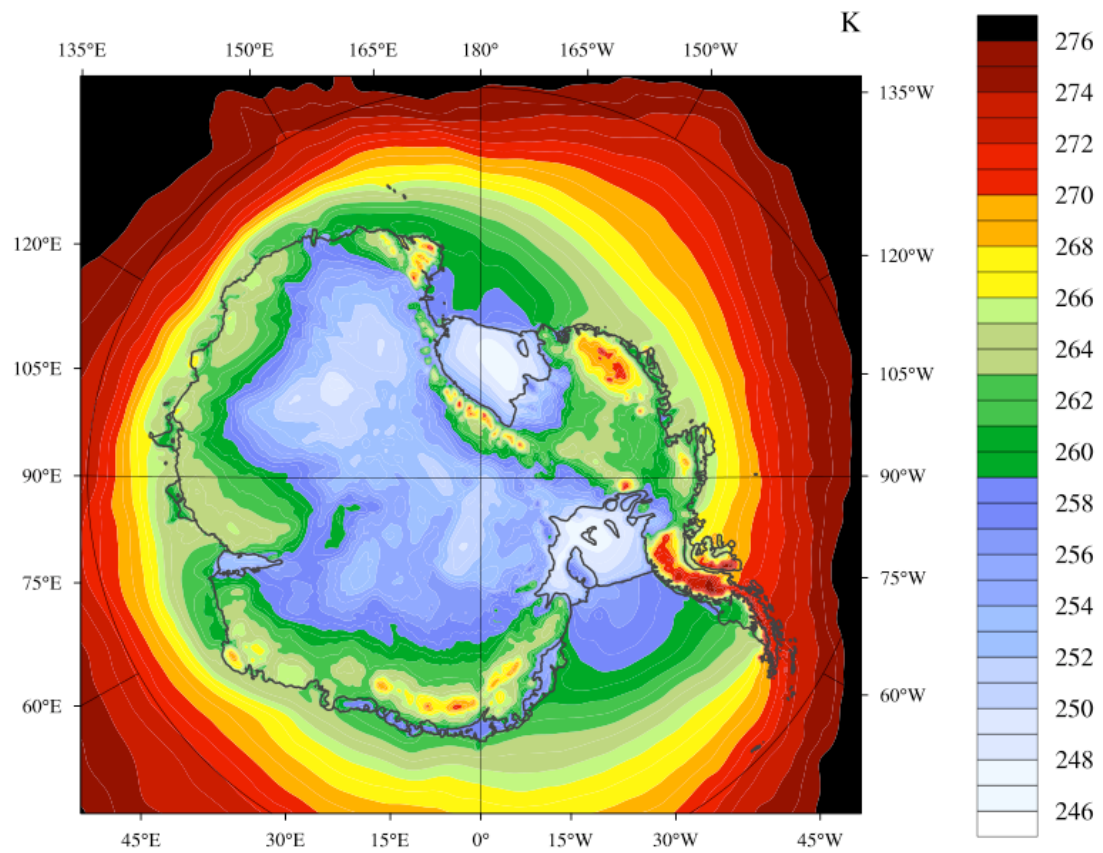
Annual Mean (2009-2012) Geopotential Height at 500 hPa (HGT)



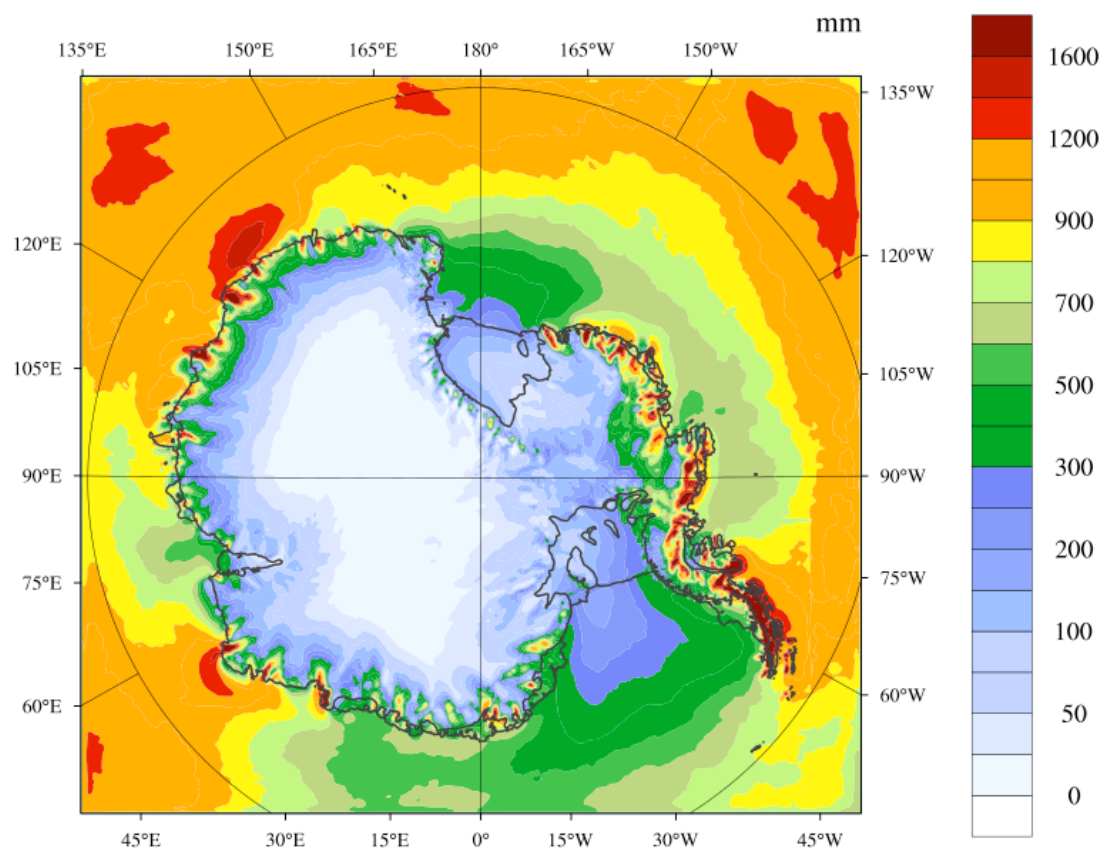
Annual Mean (2009-2012) Temperature at 2 m (TMP)



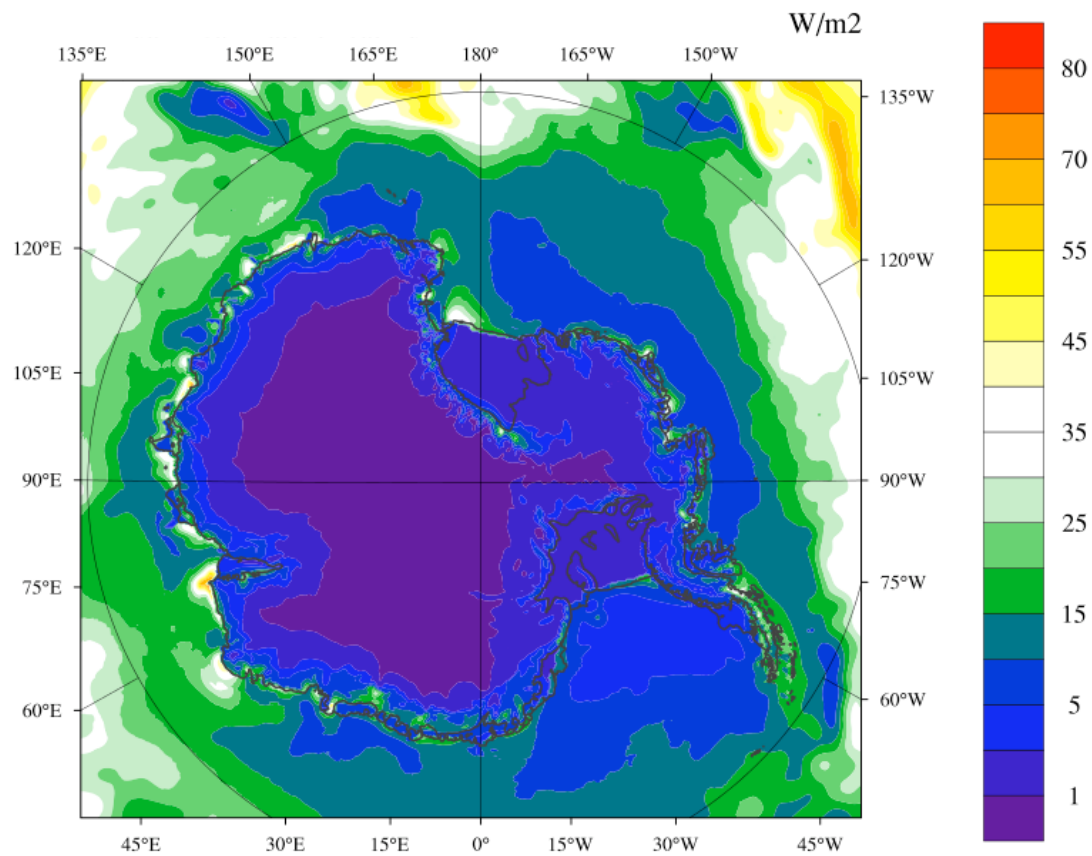
Annual Mean (2009-2012) Potential Temperature



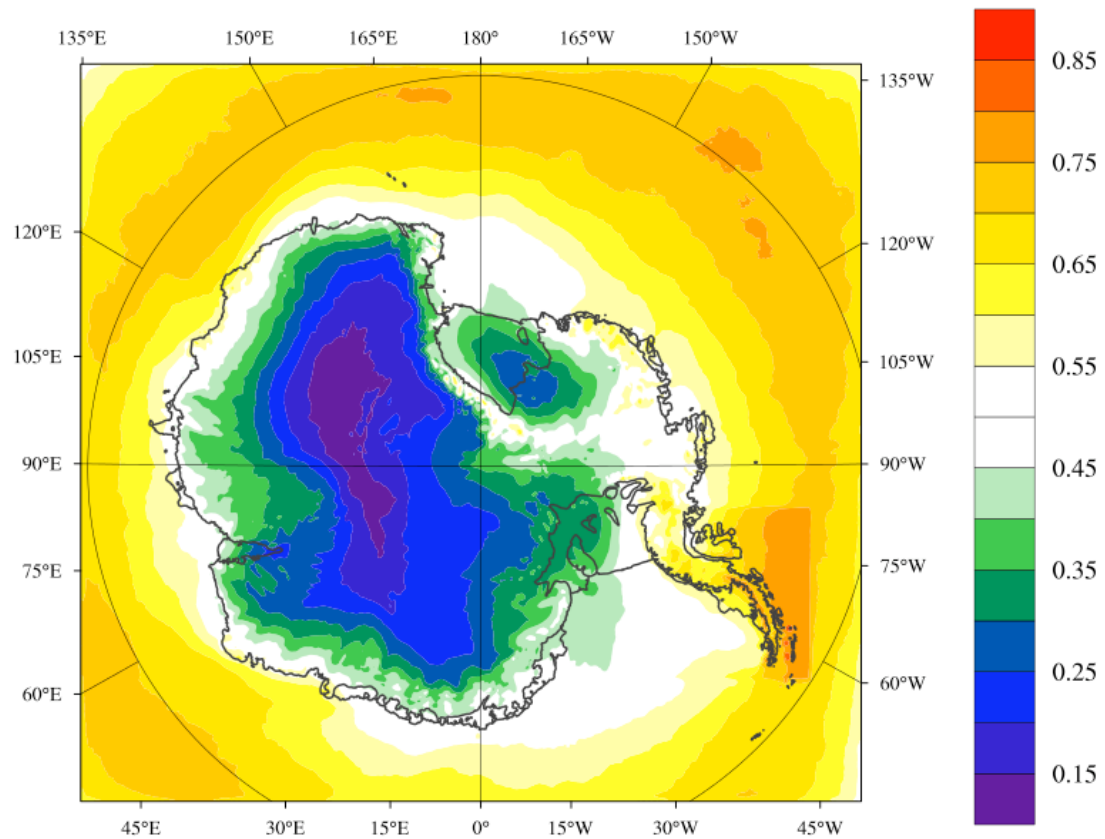
Mean (2009-2012) Annual Total Precipitation (PCP)



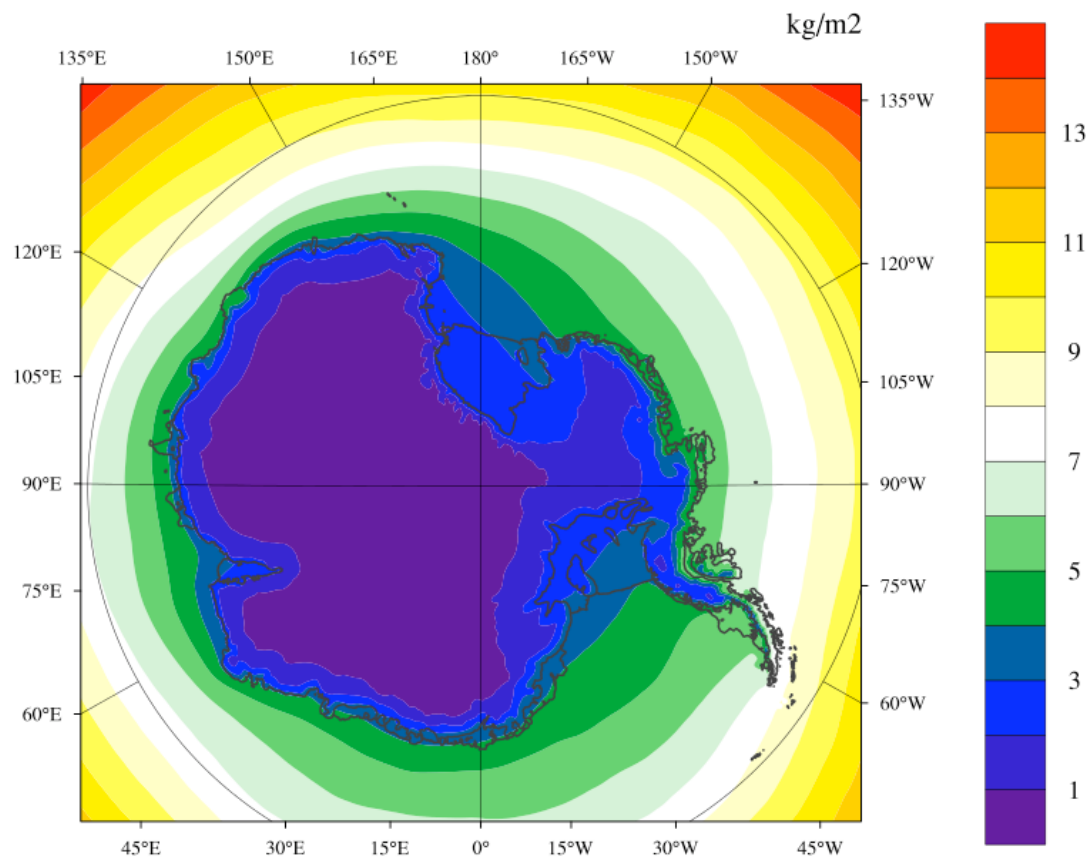
Annual Mean (2009-2012) Latent Heat Flux (LHFX)



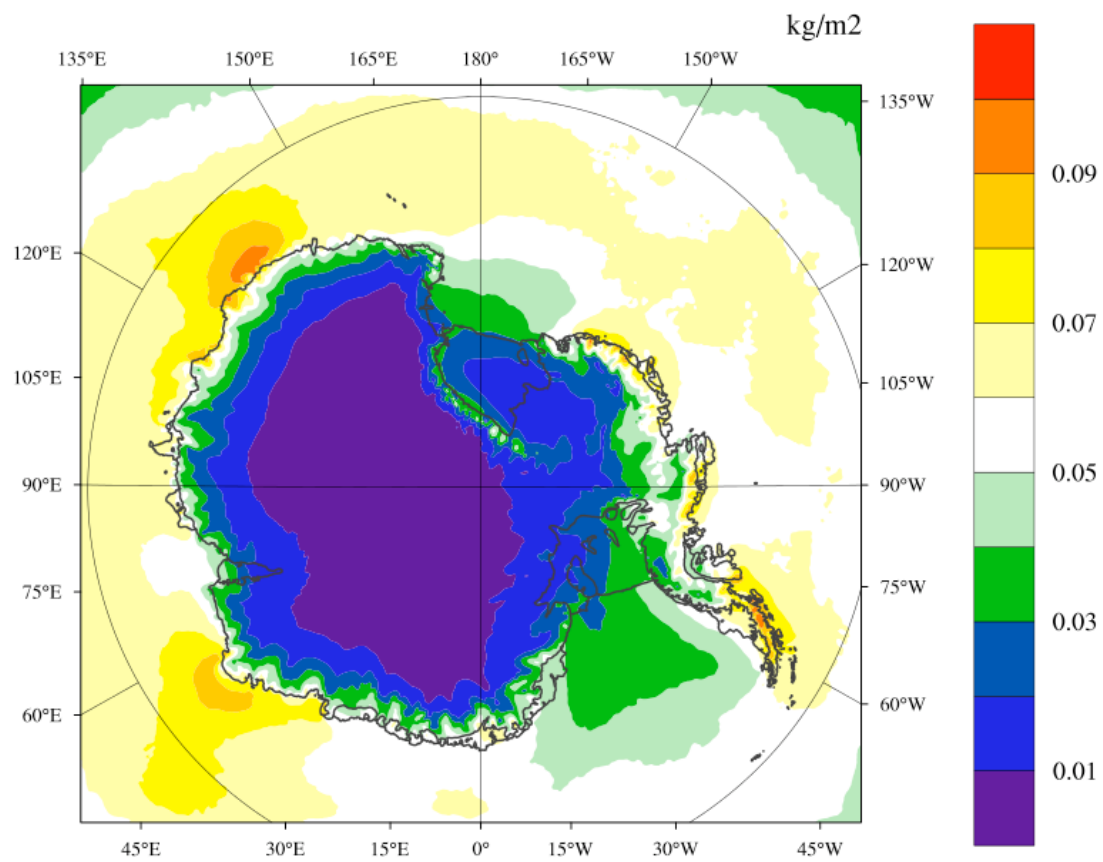
Annual Mean (2009-2012) Cloud Fraction (CLDFRC)



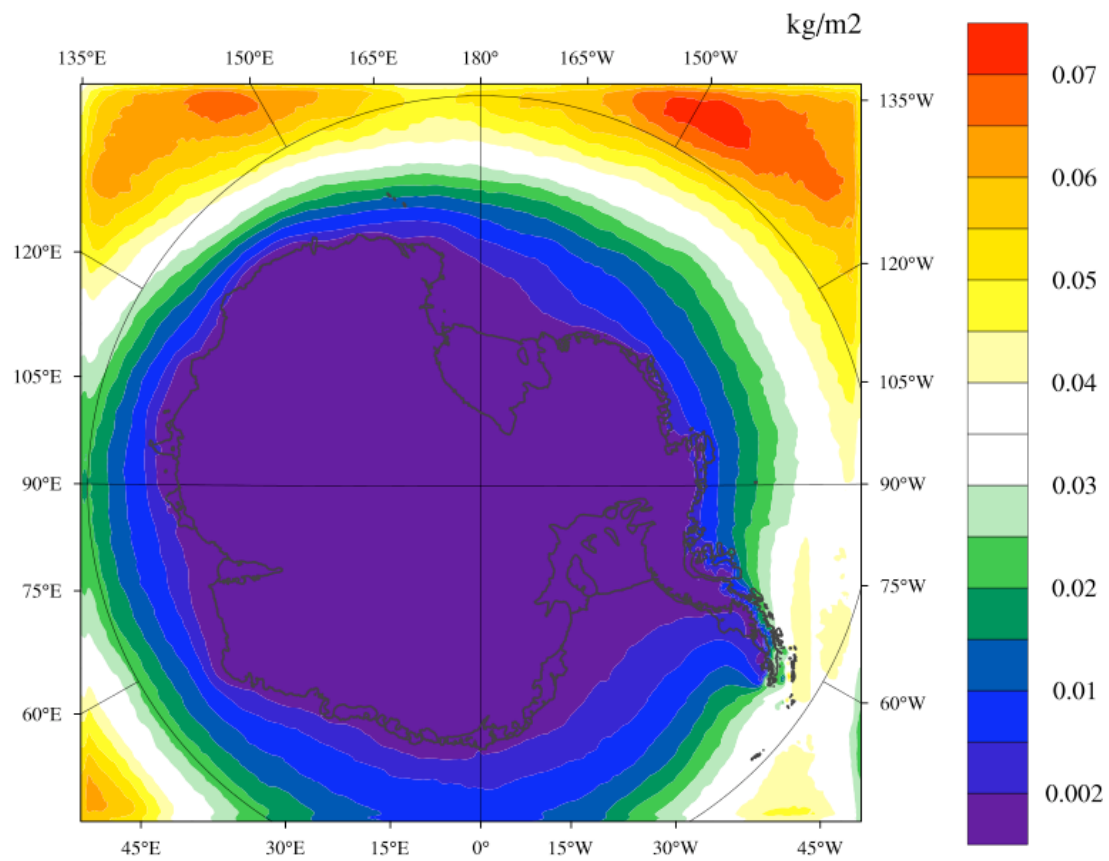
Annual Mean (2009-2012) Precipitable Water (PWAT) (kg/m²)



Annual Mean (2009-2012) Column Integrated Cloud Ice (INTCLI)

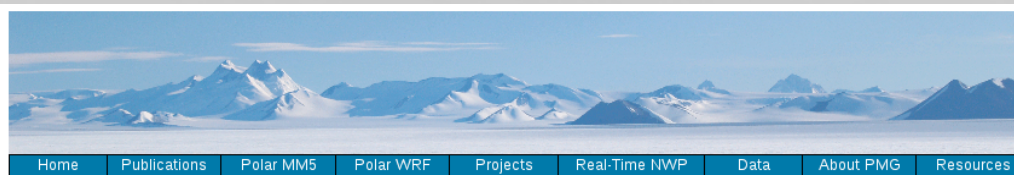


Annual Mean (2009-2012) Column Integrated Cloud Liquid Water (INTCLW)



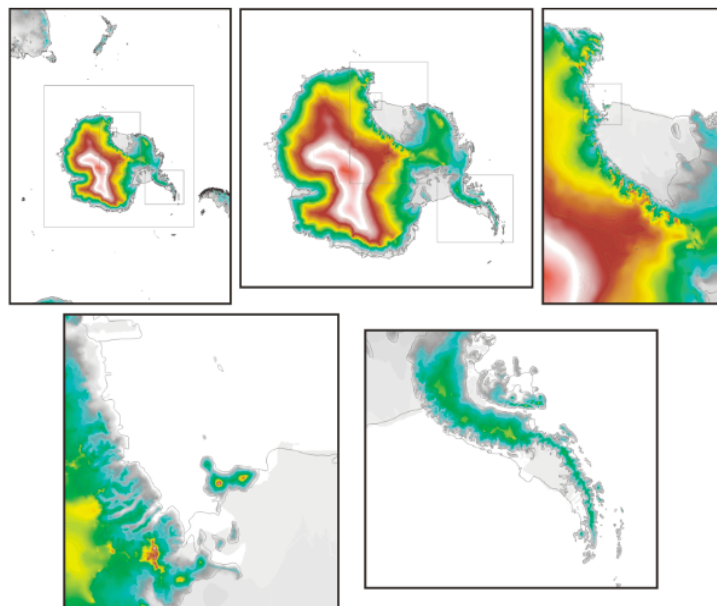
PMG AMPS Database Web

<http://polarmet.osu.edu/AMPS>



AMPS Database

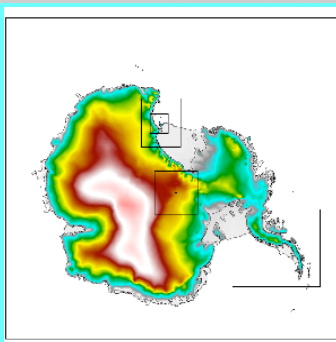
AMPS database
Home
Data
2013/01-Present (N/A)
2008/11-2012/12
Domain 2
Domain 3
Domain 4
Domain 5
Domain 6
2006-2008/10 (N/A)
Pre-WRF (MM5) 2002-2006
MM5 Data



(AMPS Grids as 2013-04-04)

PMG AMPS Database Web

<http://polarmet.osu.edu/AMPS>



Horizontal Resolution:	15-km, 442x418 Grids
Coverage:	2008/11/01-2012/12/31
Data Format:	NetCDF
Parameter Table:	List of Parameter
Constant Fields:	Constant Variables
File name:	<yyyymmdd>00_WRF_d2_<varname>_f<hhh>.nc <yyyymm>_WRF_d2_<varname>_mon.nc <yyyymmdd>00: model initial time (00Z) <varname>: variable name f<hhh>: forecast hour, model valid hour

("3h" = 3 hourly forecast data; "mm" = monthly mean data)

DATA: 2008

Month	Nov		Dec	
Parameter	3h	mm	3h	mm
PRES at surface	x	x	x	x
SLP	x	x	x	x
PWAT	x	x	x	x
PCP	x	x	x	x