MERRA Data Access

MERRA FILE COLLECTIONS

• Distributed through a modeling data portal at the Goddard DISC:
http://disc.sci.gsfc.nasa.gov/MDISC/

• MERRA products are organized into 24 collections in HDF
• All distributed data products have slightly degraded precision and are compressed with gzip.

• Data are produced on three horizontal grids:
  • Native ----------- (1/2 by 2/3 w/ FV conventions)
  • Reduced ------- (1½ by 1½ Dateline-edge, Pole-edge)
  • Reduced FV -- (1 by 1¼ w/ FV conventions)

• In the vertical, 3-D data are on:
  • 72 model layers
  • 42 pressure levels

• Temporal resolution:
  • 3D products are 3-hourly
  • 2D products are hourly

• Total online collections ~70TB

http://gmao.gsfc.nasa.gov/research/merra/MERRA_FileSpec_DRAFT_09_02_2008.pdf

Data Access

- Starting point: http://disc.sci.gsfc.nasa.gov/MDISC/

- Sign up for a news/info mail list

- Web-based FTP
    - All Collections: Hourly, Monthly, Monthly Diurnal

- Mirador search provides ftp download scripts

- Wget can mirror entire paths (collections)

Wget mirroring example script

```
#!/bin/csh -f

wget -r -N -nH --cut-dirs=1
    ftp://goldsmr2.sci.gsfc.nasa.gov/data/s4pa/MERRA_MONTHLY/MATMNXSLV.5.2.0
wget -r -N -nH --cut-dirs=1
    ftp://goldsmr2.sci.gsfc.nasa.gov/data/s4pa/MERRA_MONTHLY/MATMNXRAD.5.2.0
wget -r -N -nH --cut-dirs=1
    ftp://goldsmr2.sci.gsfc.nasa.gov/data/s4pa/MERRA_MONTHLY/MATMNXFLX.5.2.0
wget -r -N -nH --cut-dirs=1
    ftp://goldsmr2.sci.gsfc.nasa.gov/data/s4pa/MERRA_MONTHLY/MATMNXINT.5.2.0

wget -r -N -nH --cut-dirs=1
    ftp://goldsmr3.sci.gsfc.nasa.gov/data/s4pa/MERRA_MONTHLY/MAIMCPASM.5.2.0
wget -r -N -nH --cut-dirs=1
    ftp://goldsmr3.sci.gsfc.nasa.gov/data/s4pa/MERRA_MONTHLY/MAIMNPANA.5.2.0
```

Get the latest version!!

Works on Linux, Win and Mac

Data Access

- FTP Subsetter
  - Cuts the domain size, variables and time to produced tailored smaller data downloads
- NetCDF Converter
- OpenDAP (formerly DODS) and Grads Data Server (GDS)
- Giovanni (Coming soon)
- Locally: NCCS at the DMF Archive
  - Use as an alternative for certain data requests
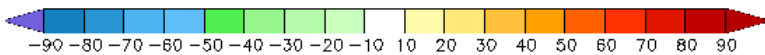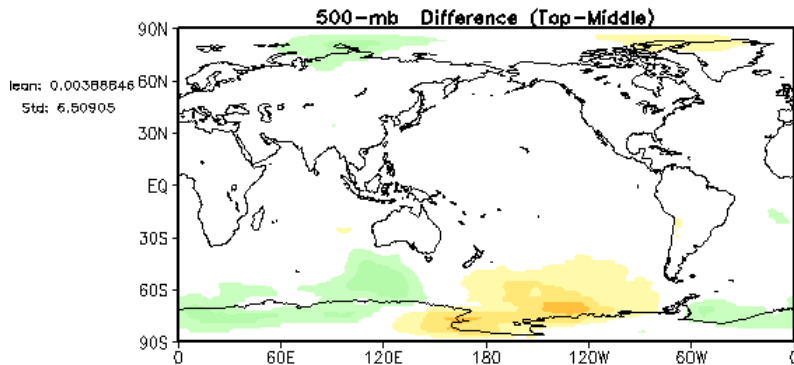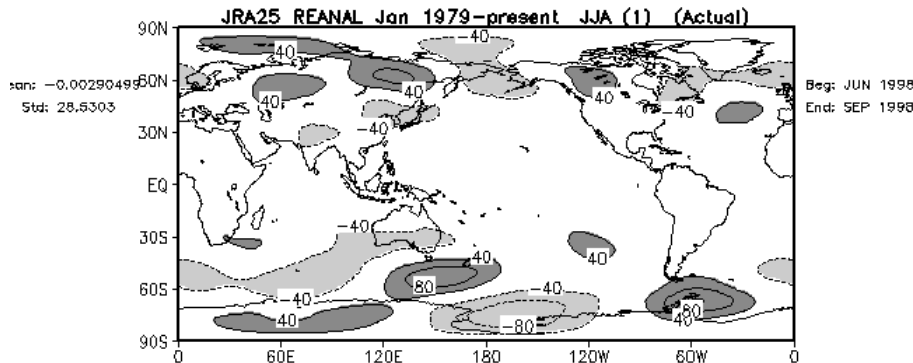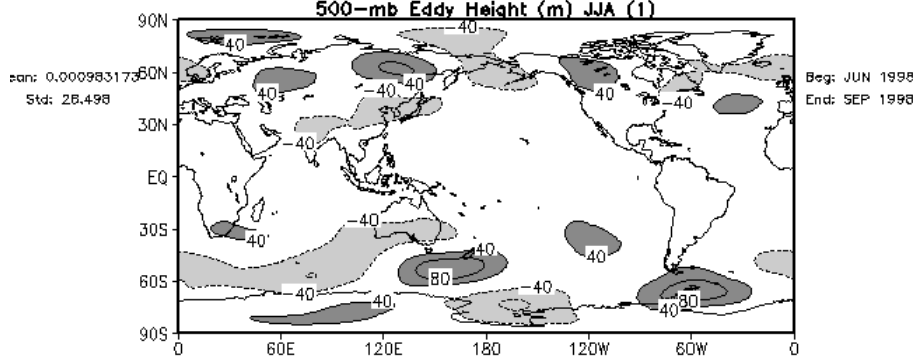
MERRA On-Line Atlas

- Updated regularly with monthly comparisons versus existing reanalyses and some global observed data sets

- More comparisons being added and will be redone at the completion of MERRA

- Beta Version Comments Welcome

http://gmao.gsfc.nasa.gov/research/merra/prequel/view.php

Example figures from the Atlas

500mb Eddy Height vs JRA25

Precipitation Taylor Diagram, All Reanalyses using GPCP as the reference