

# Week 6, Problem 1

Lets compare MM5 forecasted precip  
and stage4 data

# Step 1: Identify Data Sources

- † 1. MM5V3 (Binary Output)
- † 2. NCEP Stage4 Precipitation (Grib)
- † <http://wwwt.emc.ncep.noaa.gov/mmb/ylin/pcpanl/stage4/>
- †
- † One way or another we need to get to NetCDF, since it is a useful format.

# Getting MM5 to NetCDF

- † We have a handy program called 'archiver' installed in /usr/local/bin. Running it is simple:
- †
- † `/usr/local/bin/archiver MMOUT_DOMAIN1 00 48`
- †
- † will create a `MMOUT_DOMAIN1.nc` file

# Converting Grib to NetCDF

† As a part of the NWS NDFD, they have a swiss army knife application called 'degrib'. It can do a lot! Including convert Grib to NetCDF

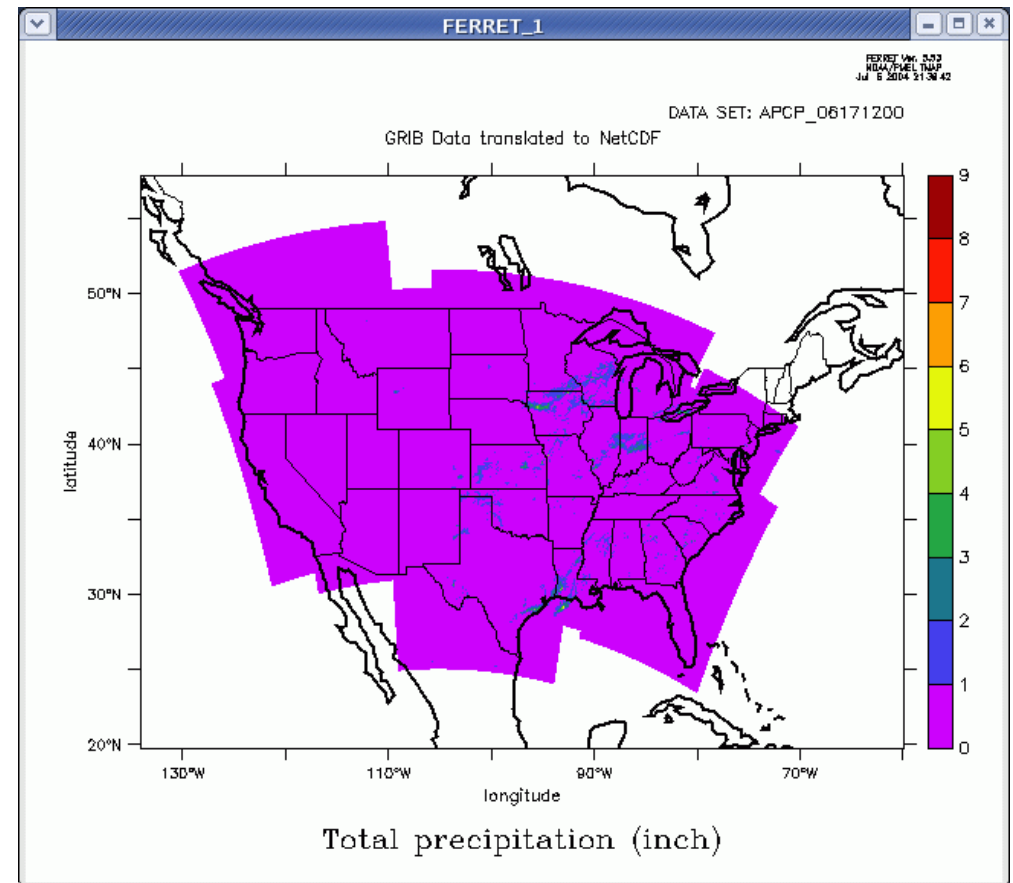
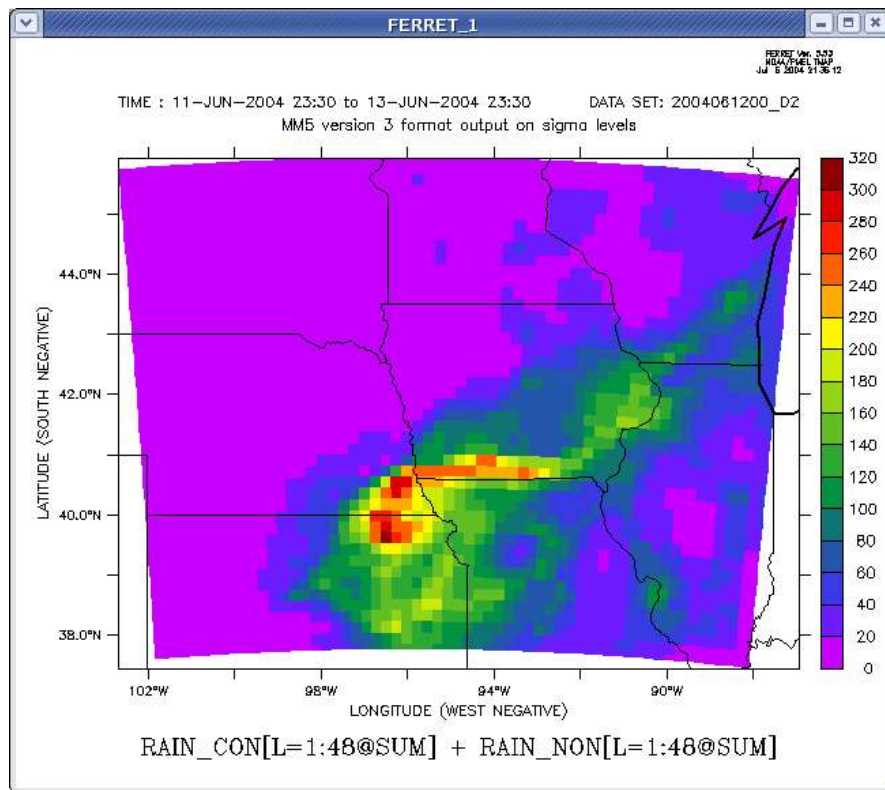
†

†

```
degrib -in ST4.2004061712.24h -C -NetCDF 1
```

generates a file called: APCP\_06171200.nc

# So we have precip data!



# Comparing Grids in Ferret

We need to regrid both curvilinear grids to a regular lat-lon grid and then compare those generated grids. In Ferret, we can do this:

! Define Our Lat/Lon grid box

DEFINE AXIS/X=100w:90w:0.5/UNITS=degrees x0

DEFINE AXIS/Y=39n:44n:0.5/UNITS=degrees y0

# And then regrid our NCEP data

! Our NCEP stage4 data  
use APCP\_06171200.nc

! change our variables from 2-D to 1-D  
let precip= XSEQUENCE(APCP\_SFC)  
let lon1d= XSEQUENCE(LONGITUDE)  
let lat1d= XSEQUENCE(LATITUDE)

! We create a variable called outg which we will use later  
LET outg = SCAT2GRIDGAUSS\_XY(lon1d, lat1d, precip, x[gx=x0],y  
[gy=y0],0.5,0.5,2,2)

# And then regrid our MM5 data

```
! We load our MM5 output
use 2004061200_D2.nc
let mm= XSEQUENCE( rain_non[L=1:24@SUM] + rain_con
[L=1:24@SUM] )
let mlat1d = XSEQUENCE( latitcrs )
let mlon1d = XSEQUENCE( longicrs )
LET mmoutg = SCAT2GRIDGAUSS_XY(mlon1d, mlat1d, mm, x
[gx=x0],y[gy=y0],0.5,0.5,2,2)
```

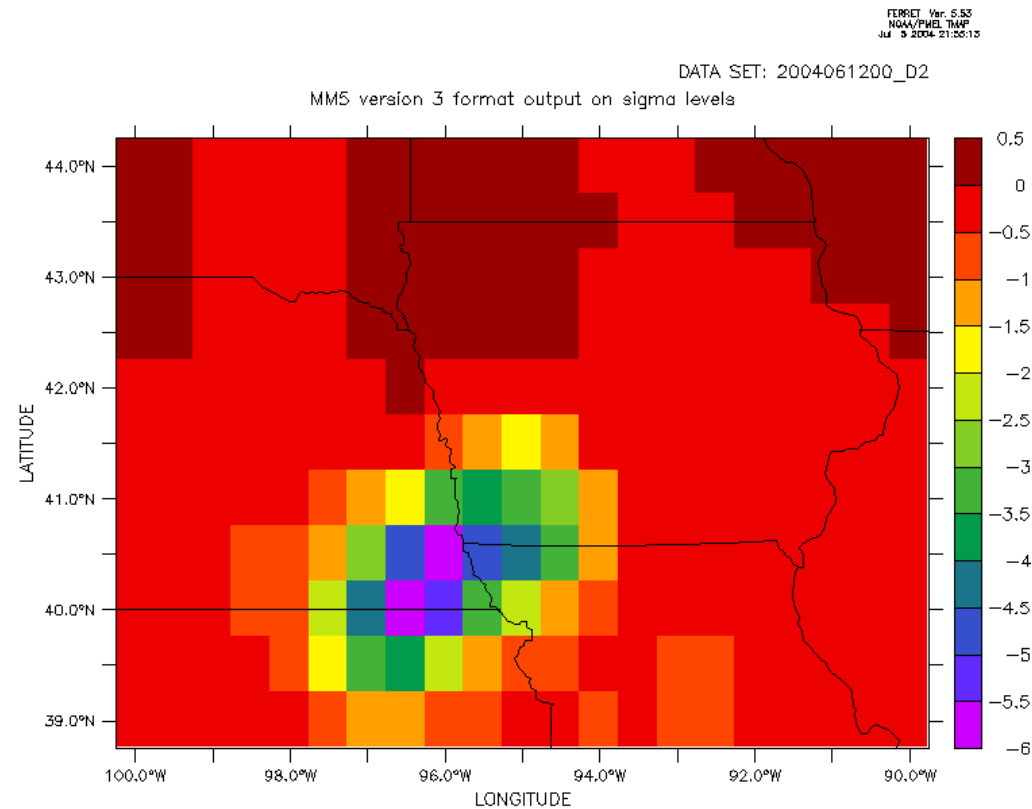


# And then we plot

shade outg[d=1] - mmoutg

go land\_detail thick overlay black black

FRAME/FILE=compare.gif



OUTG[D=APCP\_06171200] - MMOUTG

† Thanks to Jaison Kurian on the Ferret User's list for pointing out the XSEQUENCE function.

†

† If you did this for real, you would want to have your NCEP precip data temporally match your MM5 data. Augh....