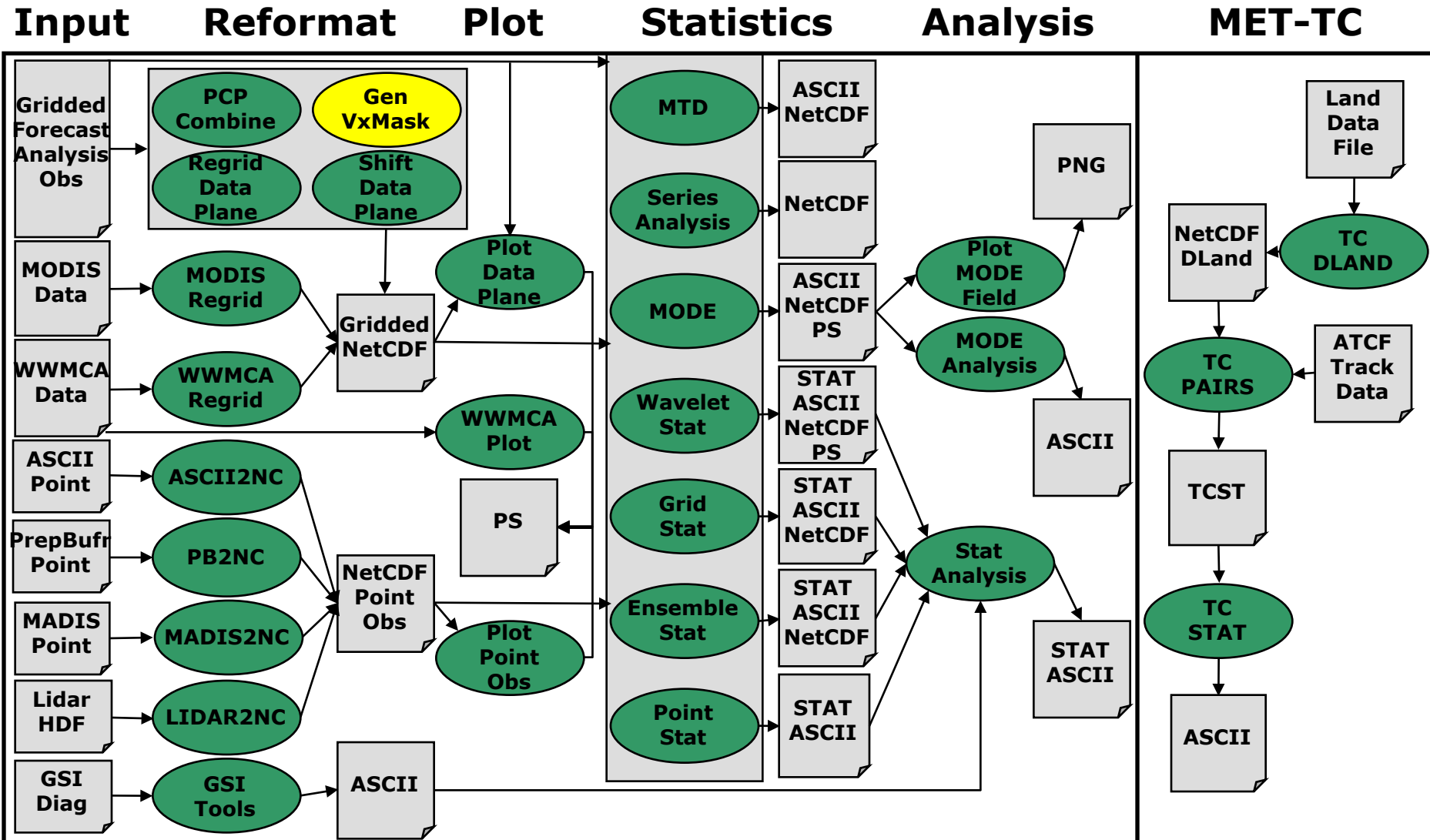


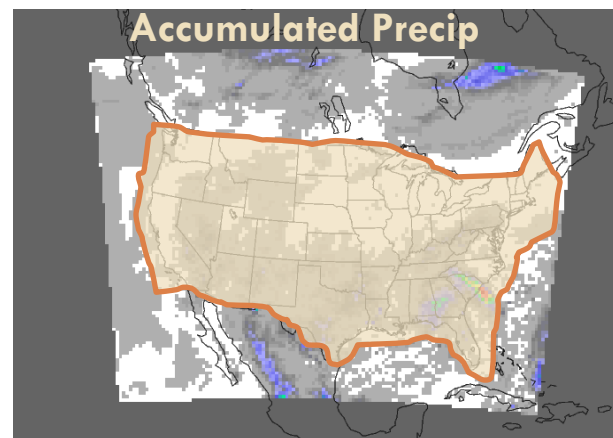
Gen-Vx-Mask Tool

Gen-Vx-Mask Tool

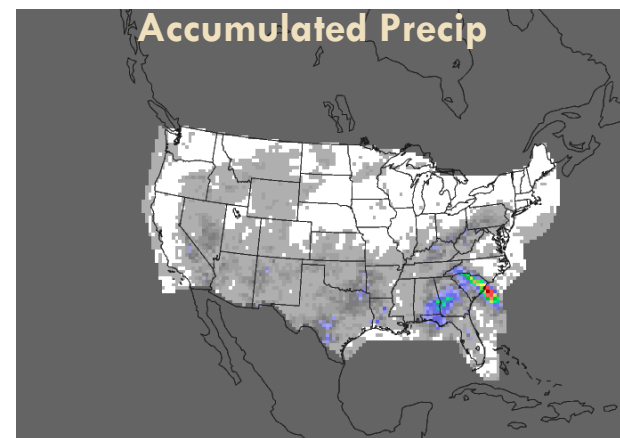
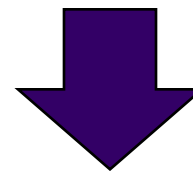


Gen-Vx-Mask: Overview

- **Generate Verification Mask**
 - Replaces earlier Gen-Poly-Mask and Gen-Circle-Mask tools
- **Purpose:**
 - Generate mask once for a domain and use the output many times.
- **Functionality:**
 - Generate a 0/1 bitmap mask field to define which grid points are included in statistics.
 - Support multiple masking methods.
 - Run iteratively to define complex masking region.
 - Define mask once prior to running the MET statistics tools.
 - No configuration file.
- **Data formats:**
 - Reads gridded data files.
 - Reads ASCII formatted lat/lon file.
 - Writes gridded output NetCDF mask file.



| CONUS | |
|--------------------|-----------|
| 31.1931 | -120.4211 |
| 31.2291 | -120.4976 |
| 31.2650 | -120.5741 |
| 31.3009 | -120.6123 |
| 31.3369 | -120.6506 |
| 31.3728 | -120.6888 |
| 31.4087 | -120.6888 |
| 31.4447 | -120.7270 |
| 992 more points... | |



Gen-Vx-Mask: Usage

Usage: gen_vx_mask

input_file

mask_file

out_file

[-type string]

[-input_field string]

[-mask_field string]

[-complement][-union]

[-intersection][-symdiff]

[-thresh string]

[-height n][-width n]

[-value n]

[-name string]

[-log file]

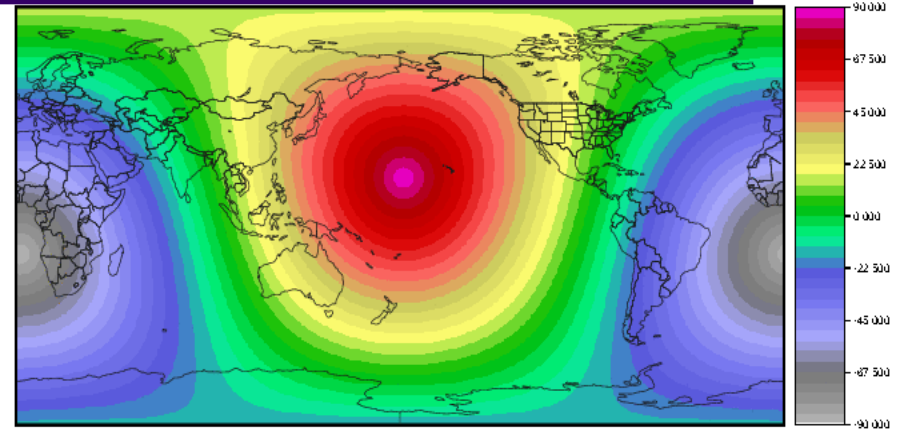
[-v level]

[-compress level]

| | |
|-------------------------------------|---|
| input_file | Defines grid for the mask |
| mask_file | Defines the spatial masking area |
| out_file | Output NetCDF file name |
| -type string | poly, box, circle, track, grid, data, solar_alt, or solar_azimuth |
| -input_field | Field for initial value at each grid point (instead of 0) |
| -mask_field | Field for data masking |
| -complement | Define complement of the mask |
| -union -intersection -symdiff | Control logic for combining -input_field and current mask |
| -thresh | Threshold for circle, track, data, solar_alt, and solar_azimuth types |
| -height, -width | Height and width for box type |
| -value, -name | Output mask value and variable name |

Gen-Vx-Mask: mask_file by Type

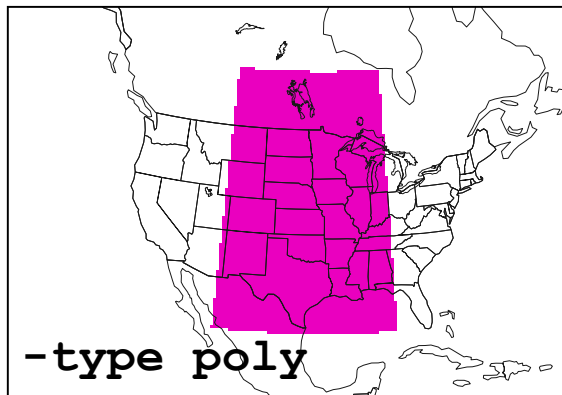
1. mask_file = Lat/Lon file
 - Polyline (poly)
 - Box
 - Circle
 - Track
2. mask_file = gridded data file
 - Grid
 - Data
 - Lat or Lon
3. mask_file = gridded data file or timestamp
 - Solar Altitude (solar_alt)
 - Solar Azimuth (solar_azi)



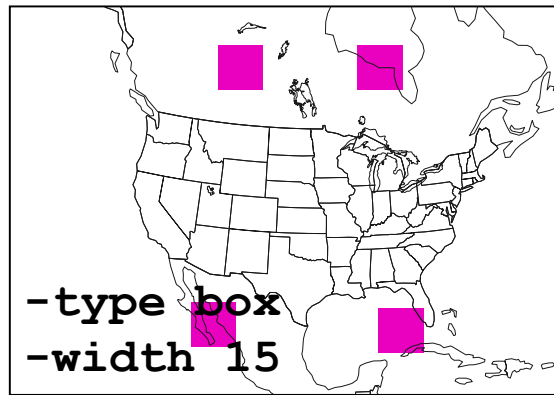
solar_alt_00.nc

Gen-Vx-Mask: Lat/Lon File Types

```
gen_vx_mask wrfprs_ruc13_12.tm00 MyLatLonPoints.txt \  
poly_mask.nc -type poly
```



poly_mask.nc



box_mask.nc

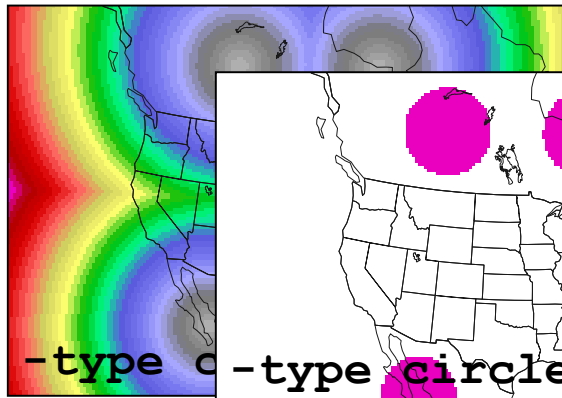
MyLatLonPoints

25 -110

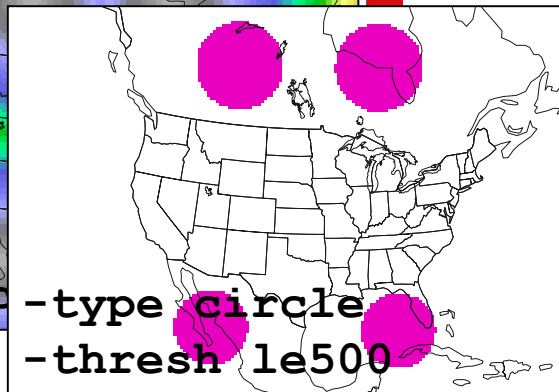
55 -110

55 -85

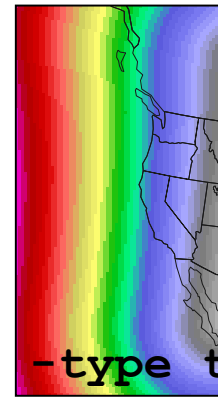
25 -85



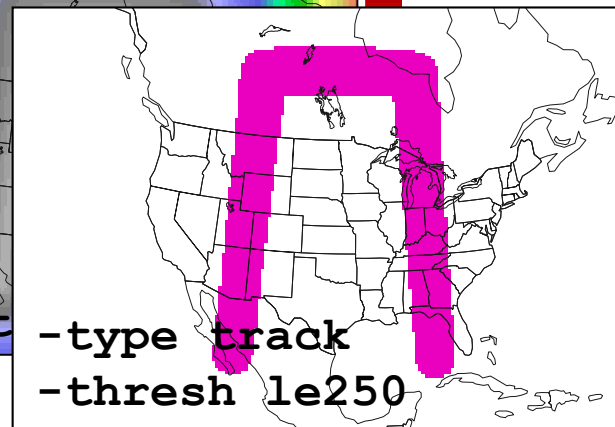
circle_mask_no_thresh.nc



circle_mask_with_thresh.nc



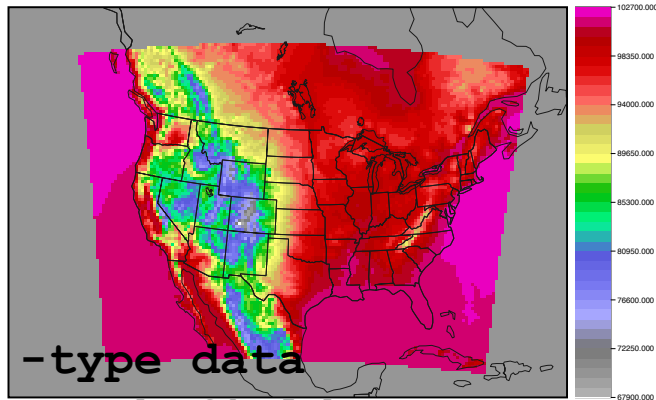
track_mask_no_thresh.nc



track_mask_with_thresh.nc

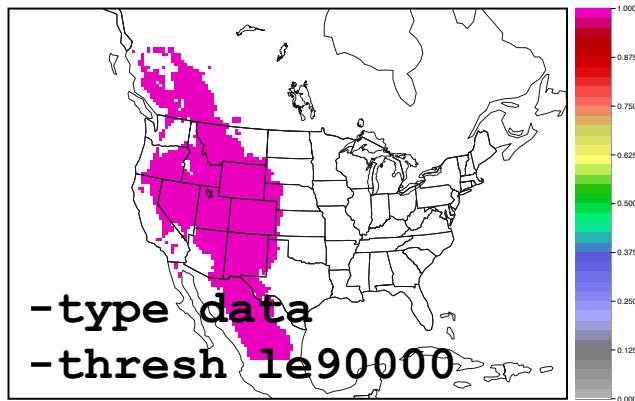
Gen-Vx-Mask: Data File Types

```
gen_vx_mask wrfprs_ruc13_12.tm00 d01_2009123112_02400.grib \
  grid_mask.nc -type grid
```

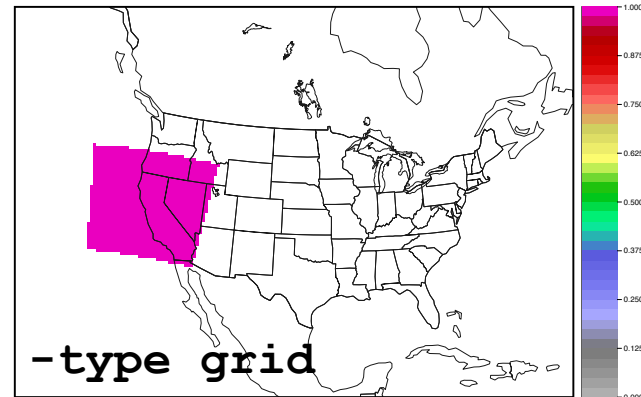


-mask_field

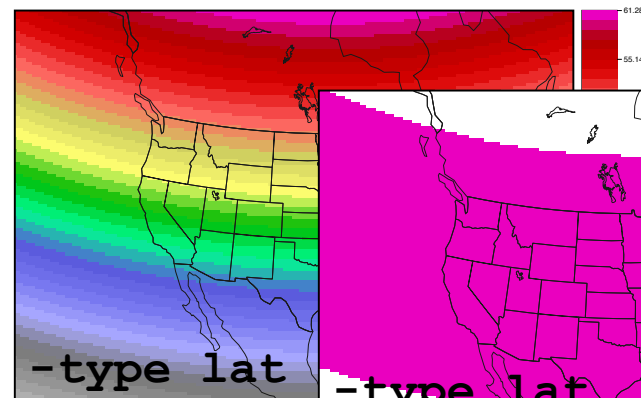
'name="PRES"; level="L0";'



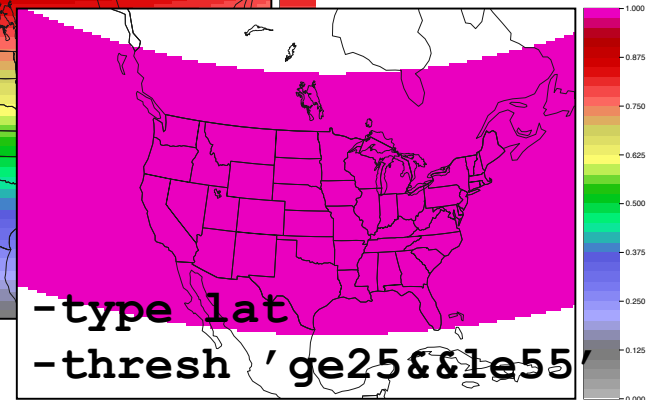
data_mask_with_thresh.nc



grid_mask.nc



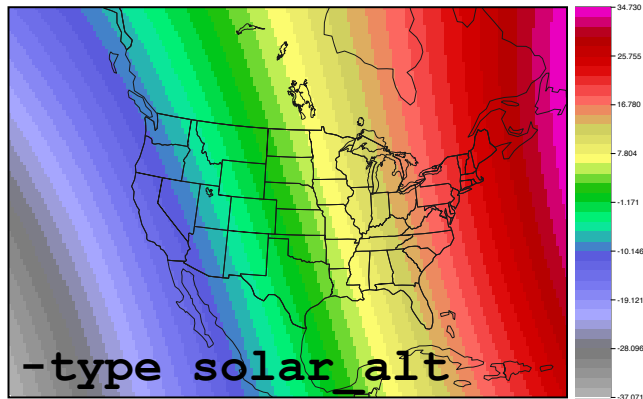
lat_mask_no_thresh.nc



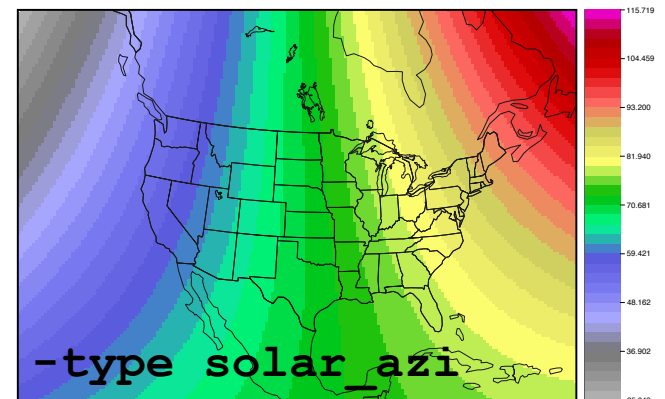
lat_mask_with_thresh.nc

Gen-Vx-Mask: Timestamp Types

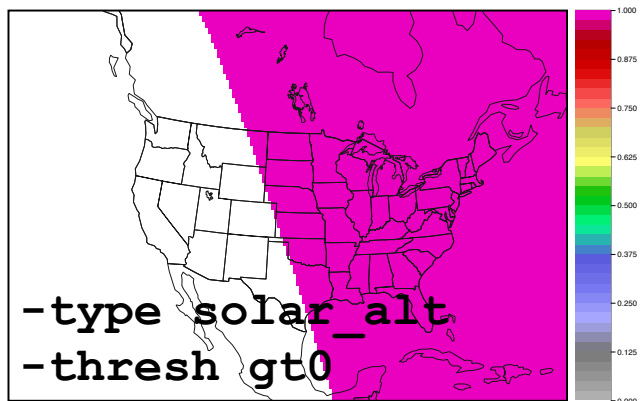
```
gen_vx_mask wrfprs_ruc13_12.tm00 20050807_12 \  
solar_alt_mask.nc -type solar_alt
```



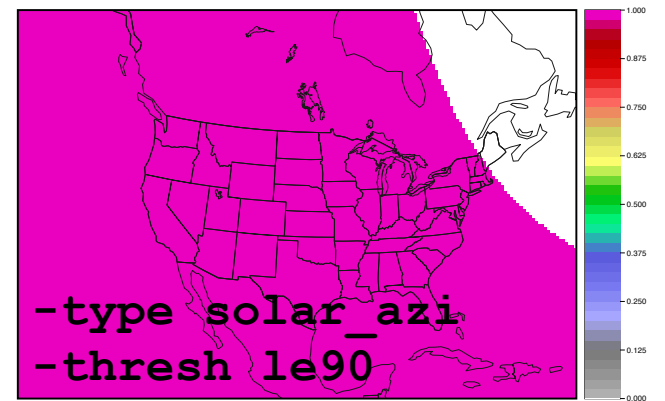
solar_alt_mask_no_thresh.nc



solar_az_mask_no_thresh.nc

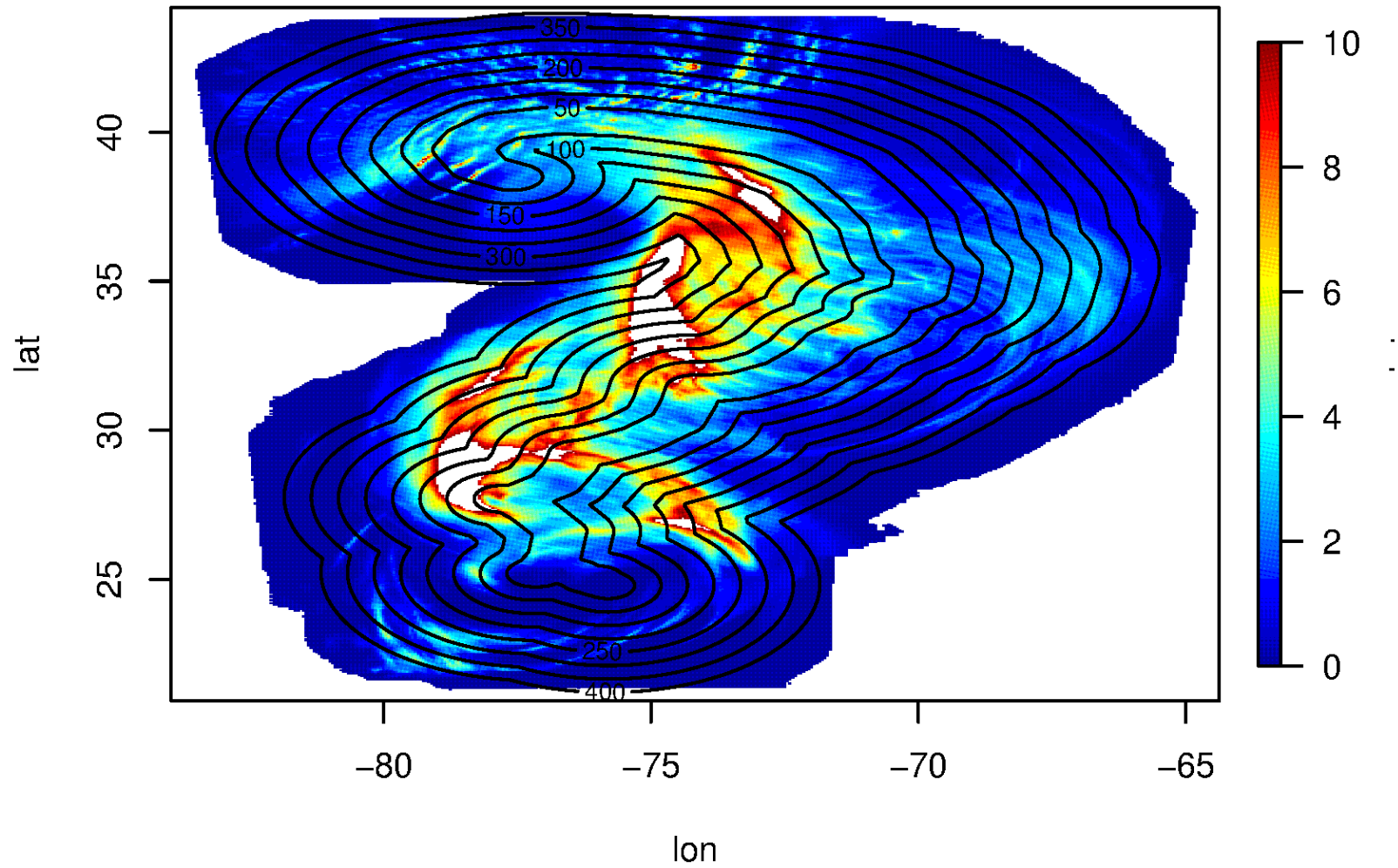


solar_alt_mask_with_thresh.nc



solar_az_mask_with_thresh.nc

Gen-Vx-Mask: Storm Following



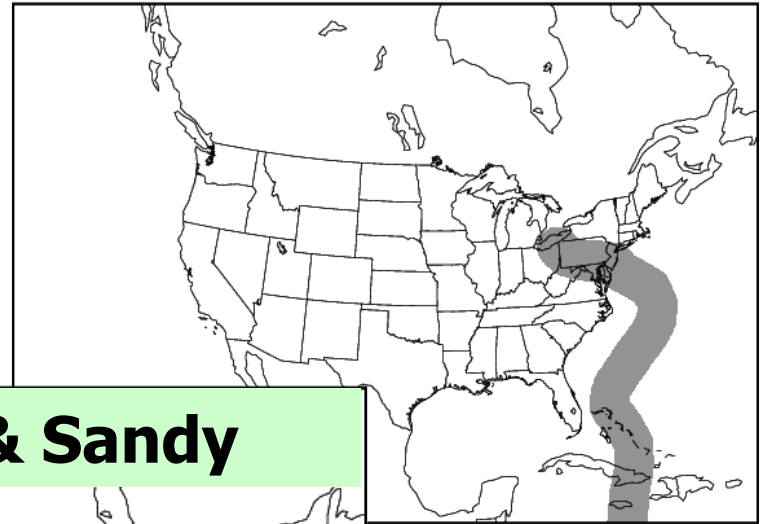
**Complex masking definition including
storm-following masking**

Gen-Vx-Mask: Set Logic

Land == 1



Sandy 200km



Not Land && Sandy

