

# Defining the model domain and initial conditions



**National Center for Atmospheric Research**



# WRF Preprocessing System (WPS)

# Domain Definition & Static Input Data

- WRF Preprocessing System (WPS)
  - Suite of programs and data to prepare real world simulations
- geogrid.exe
  - Defines model domains
  - Interpolates static geographical data to the model grids
- geogrid file (geo\_em\*.nc)
  - Coordinate system information contained in global attributes
  - Static 2D and 3D gridded variables

# WPS Namelist

```
1 &share
2   wrf_core = 'ARW',
3   max_dom  = 1,
4   start_date = '2006-08-16_12:00:00',
5   end_date   = '2006-08-16_18:00:00',
6   interval_seconds = 21600,
7   io_form_geogrid = 2,
8 /
9
10 &geogrid
11   parent_id      = 1,
12   parent_grid_ratio = 1,
13   i_parent_start  = 1,
14   j_parent_start  = 1,
15   e_we           = 23,
16   e_sn           = 29,
17   dx = 1000,
18   dy = 1000,
19   map_proj = 'lambert',
20   ref_lat  = 41.14989,
21   ref_lon  = -75.48096,
22   truelat1 = 30.0,
23   truelat2 = 60.0,
24   stand_lon = -97.0,
25   geog_data_res = 'nlcd2011_30m+gtopo_30s+default',
26   geog_data_path = '/home/docker/WRF_WPS/geog_conus',
27 /
28
29 &ungrib
30   out_format = 'WPS',
31   prefix = 'FILE',
32 /
33
34 &metgrid
35   fg_name = 'FILE',
36   io_form_metgrid = 2,
37 /
```

# References

## WRF & WPS

- [Technical Description](#)
- [Users' Guide](#)
- [Tutorials](#) (online, in person, slides from previous tutorials)
  - [2021 Tutorial](#)
    - [WPS: Fundamental Capabilities](#)
    - [Running the WPS](#)
    - [Advanced Usage of the WPS](#)



**WRF-Hydro**<sup>®</sup>  
MODELING SYSTEM

WRF-Hydro: [http://www.ral.ucar.edu/projects/wrf\\_hydro/](http://www.ral.ucar.edu/projects/wrf_hydro/)