Lab 11: Extratropical cyclones III: Lifecycles of extratropical cyclones

Objective: Today you will analyze the synoptic evolution of an extratropical cyclone using Python.

Materials: Your laptop, Enthought Python, Internet access.

Procedure:

1) GFS netcdf files covering the lifecycle of this extratropical cyclone are located on the SoM Ramadda server at `http://ramadda.metr.ou.edu`. Click on 'Courses', 'class archive', 'metr4424', then 'lab11' to access the directory with the GFS netcdf files. You do not need to download each file, just the files that you want to make a plot from.
2) Use the knowledge and tools you have gained in class and in previous labs to provide a *basic* description of the life cycle of the extratropical cyclone you began analyzing in last week's lab (Lab 10). You will hand in a discussion that describes the evolution of this particular extratropical cyclone, from pre-genesis conditions, to its genesis, development, occlusion, and decay phases (to the extent that data is available). Your discussion should include some plots (similar to the types of plots we have been making in the previous Python labs) to reinforce your statements. The length of your discussion and number of plots are entirely up to you, just be sure you have a coherent, logical, and technically accurate story of this cyclone. You can follow either the "W thinking/Vorticity" or "PV thinking" perspective of extratropical cyclone development (or a combination of both).

Hand in your discussion (with plots) by the beginning of class on Wednesday October 31.