

# Geological Data Visualization

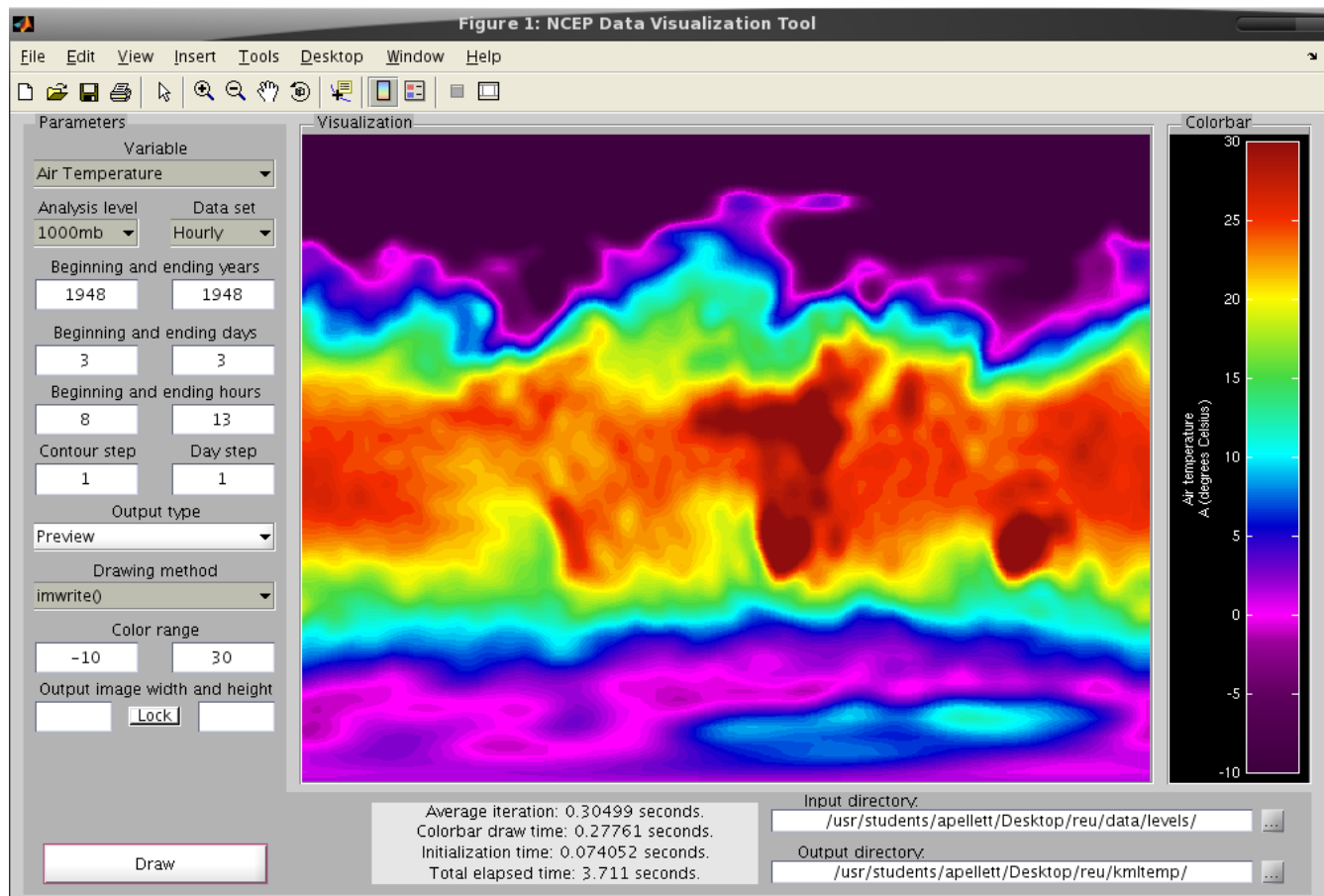
## Week 7

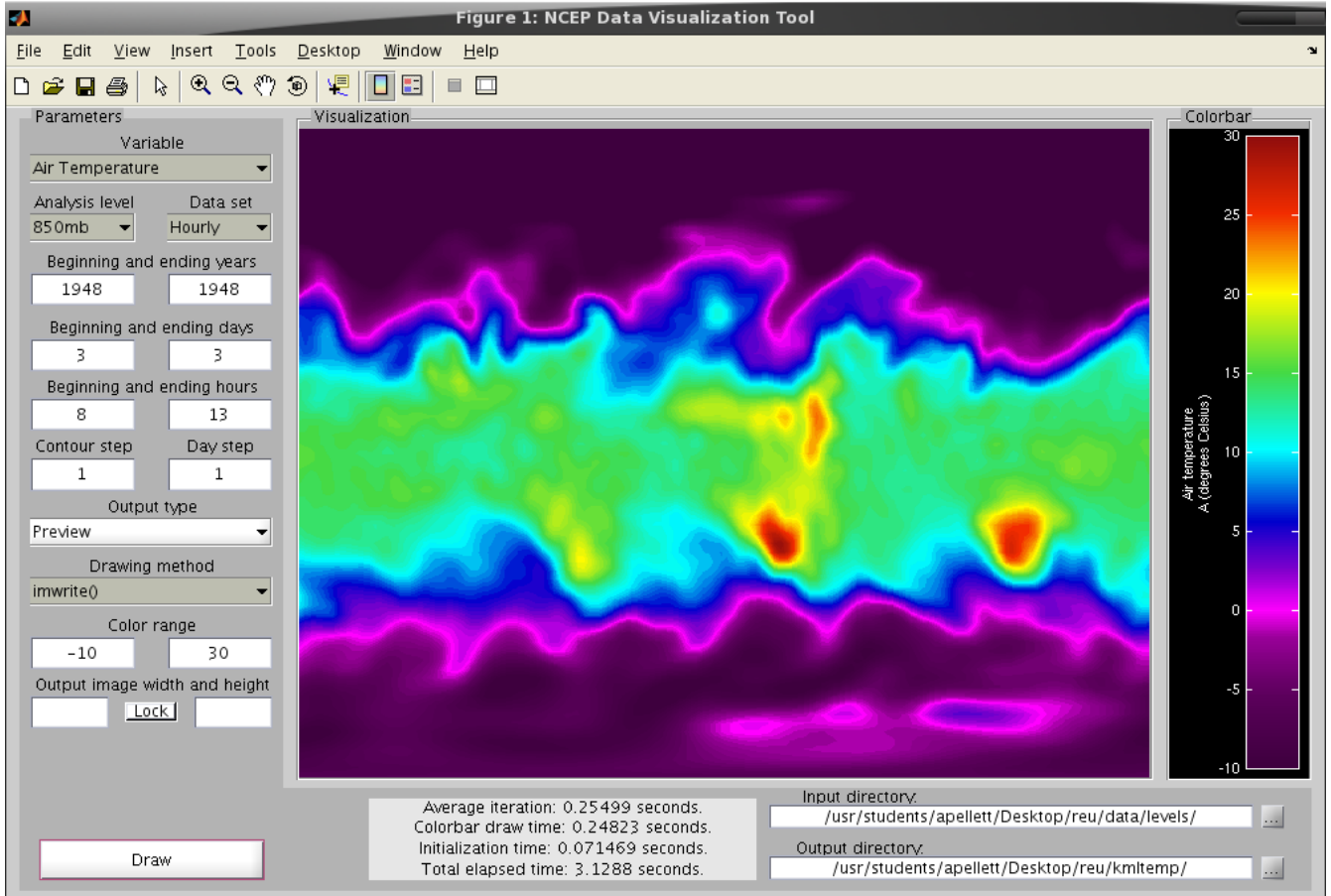
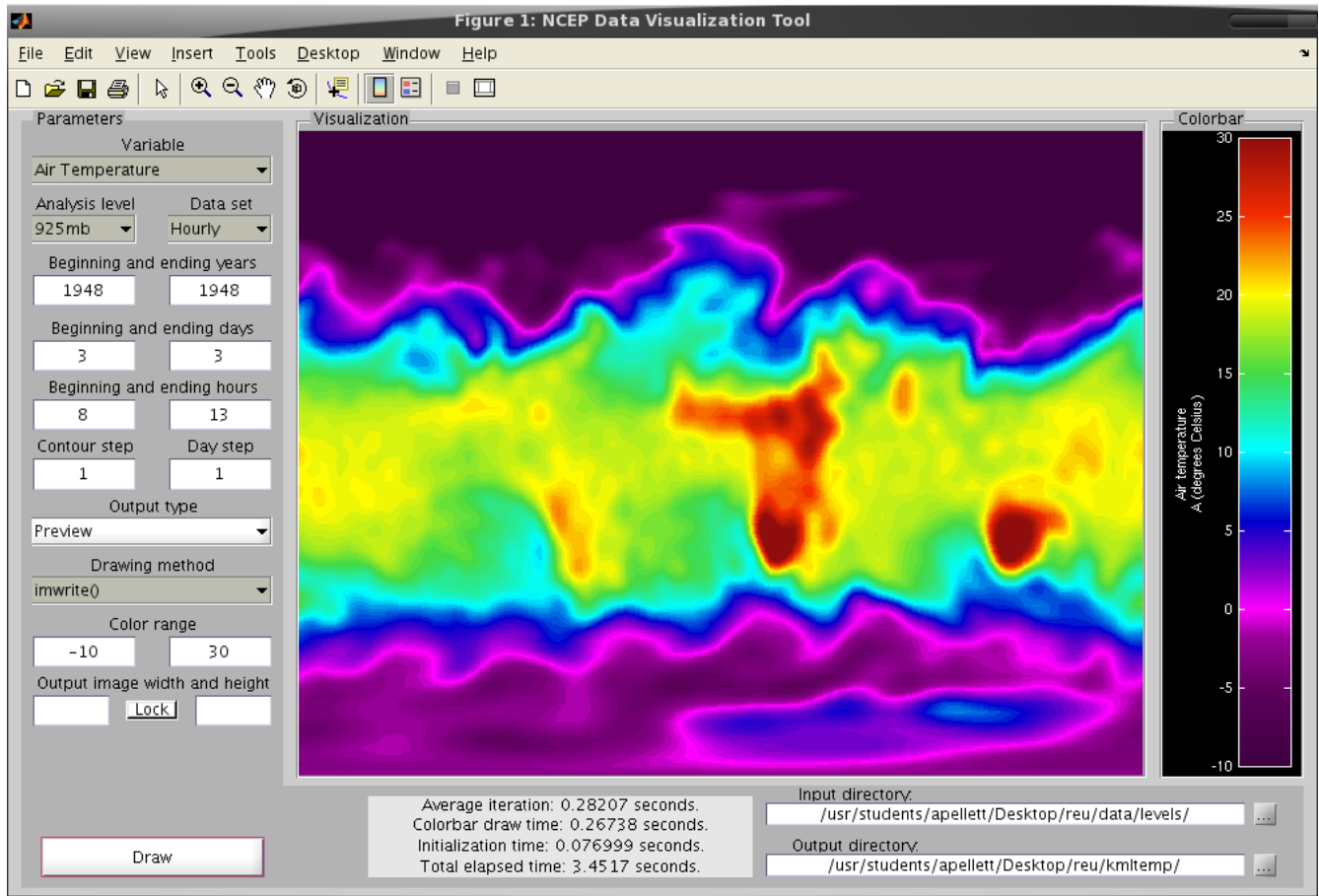
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7/16/08

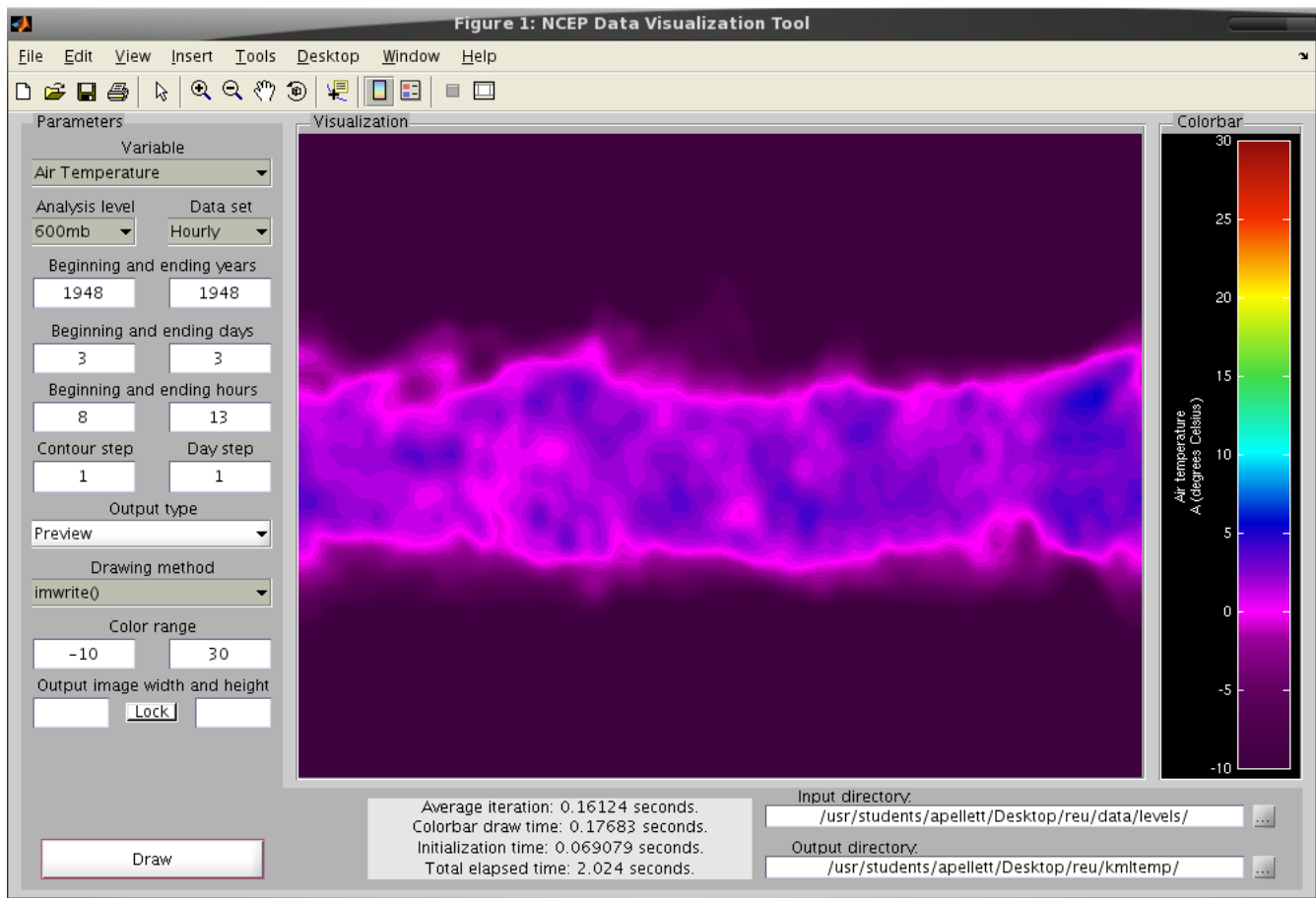
### Progress

The GUI is now capable of generating plots given the raw 6-hourly data. This was implemented with a double for loop and some adjustments to the file indexing based on the starting day and day step. Daily data can still be used; there is a user interface element for specifying whether the data file contains 6-hourly or daily averaged values. The double for loop doesn't screw up the daily functionality, since the inner loop is set to run just once for daily data, making it not much of a loop.

The ability to plot variables at different pressure levels was also added. In addition to data at the sigma .995 level, NCEP has data at a variety of pressure levels to allow for further analysis. To retrieve data points from a file with different pressure levels, an extra argument corresponding to the desired pressure level must be added to the read from the netCDF file that gets the raw data. This is implemented as a simple conditional to determine whether we are working with data at variable pressure levels or sigma .995. The pressure level argument is selected using a switch statement to correlate the pressure levels to the numbers 1 through 17. MATLAB doesn't seem to have an enumeration data type, which is unfortunate, because I've never run into a use for one before.







The preceding series of screenshots show the air temperature at one time at 4 different pressure levels. As we move up (to lower pressure levels), geographical features become less apparent, and the colors fade to purple. This could be adjusted to show more information by changing the color range, but this color range makes the zero degree Celsius (freezing) line very apparent.