

IC4.2 Part 1: Optional Job Sheet

Accessing Anomaly Information Using the Internet

Objectives:

- 1) become familiar with forecast anomaly resources on the Internet
- 2) review anomalies from a previous event using the Internet

Data: Internet

Instructions: Review the following websites to become familiar with using online anomaly resources to identify significant anomalies. Recall from IC4 Lesson 2 that significant standardized anomalies normally range from 2-3 standard deviations from normal. Values of 4 to 5 standard deviations from normal are considerably rarer. Values over 6 standard deviations are rarer still, and they are normally associated with deep tropical storms. Although the current weather being analyzed may not have anomalous winter weather, it is still useful to learn how and where to access anomaly information on the web. Bookmark the sites you find useful.

CONUS Sites: If you are investigating CONUS weather, go to the following website to view current anomaly forecasts for ensemble data or some individual model runs (site may take up to a minute to load):

<http://eyewall.met.psu.edu/ensembles/index.html>

1. Select "MREF" as the "Model" and "NOAM/500H" for the field. Move the scrollbar on the right side of the browser down to include the bottom image and the player buttons (" $<$ " and " $>$ ") at the top. Then step through the loop. Look for significant 500mb height anomalies (bottom) and ensemble spread (top). Low confidence in the strength of the anomaly occurs where ensemble spread (top) is correlated with the anomaly. High confidence in the strength of the anomaly occurs where ensemble spread (top) is not correlated with the anomaly.
2. Select "SREF" as the "Model" and "US/MSLP" as the field, and step through the loop. Look for significant anomalies in the pressure field, and gauge the confidence in the anomaly by looking at the correlation between the anomaly and the spread as in #1.
3. Select "SREF" as the "Model" and "US/850T" as the field, and step through the loop. Look for significant 850mb temperature anomalies, and gauge the confidence in the anomaly by looking at the correlation between the anomaly and the spread as in #1.
4. Select "SREF" as the "Model" and "US/850WIND" as the field, and step through the loop. Look for significant 850mb u anomalies (top image) and v anomalies (bottom image).

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OCONUS Sites: If you are investigating OCONUS weather, go to the following website to view current anomaly forecasts for *individual model runs*:

<http://www.hpc.ncep.noaa.gov/training/SDs/>

1. Select the “500 hPa Heights” link or the “Previous Cycle 500 hPa” link under the “GFS Forecast” heading. Look for significant 500mb height anomalies in the GFS forecast.
2. Select the “850 hPa Temperatures” link or the “Previous Cycle 850 hPa” link under the “GFS Forecast” heading. Look for significant 850mb temperature anomalies in the GFS forecast.

Past Events: Now that you are done accessing forecast data, it is time to look up anomaly information on an event of your choice. For both CONUS & OCONUS weather, go to the following website to view archived anomaly information from the NCEP reanalysis data:

<http://www.hpc.ncep.noaa.gov/ncepreatal/>

1. Recall a memorable event or pick one at random, and enter the cycle time (00 or 12) and date (e.g. Current Date: 1993 03 14 00 for the “superstorm”).
2. Click the “+” or “-“ above the “CYCLE” category to step forward or backward 12 hours to the next analysis time. The top left panel is the 200mb height and isotachs plot. The top right panel is the 500mb heights and the standardized anomaly 500mb heights. The lower left panel is the 850mb heights, 850mb temperatures and the standardized anomaly 850mb temperatures. The bottom right is the 1000mb heights, precipitable water, and standardized anomaly of precipitable water.
3. To play a loop of data, enter the current date and end date, and click the “Loop” button. (e.g. Current Date: 1993 03 12 00 End Date: 1993 03 15 00 for the “superstorm”).

Global Reanalysis Data: Now go to another useful website to view the interactive Global re-analysis data for a memorable event at:

<http://hart.met.psu.edu/meteo497/mapper.html>

1. Data is available in 6-hour increments for many different variables. Pick the time to include the hour, day and month of the memorable event from 3. The default case is the super storm of March 1993.

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2. The “Map Time Set” provides a loop of variables before and after the date entered. Pick “1 Day Before/After”.
3. Pick the display “Region” (e.g. North America).
4. Select the variables for the 4 panel chart (e.g. “Heights” or “U-winds”).
5. You can select the plot size, but the default “Medium” should be fine.
6. You must use the Plot button to make the image. Be patient as the program uses raw data to create images. Feel free to peruse other variables/dates.

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