Contouring and Analysis

Meteorology 311

Contouring and Analysis

- Aids in organizing and displaying an enormous quantity of data in a meaningful manner.

- Isopleth: Line of constant value of any parameter.

Isopleths

- List on page 33 of course notes.
- Isobar – pressure
- Isallobar – pressure tendency
- Height contour – height
- Isotherm – temperature
- Isallotherm – temperature tendency
- Isohume – humidity

Types of Analysis

- Subjective: hand analysis (manual)
- Objective: computerized (automated), making use of interpolation schemes.
- Contours should fit the data, yet be smooth enough so that features that are smaller scale than the spacing between observations do not appear.

Method

- Pre-analysis orientation: General inspection
  - Previous weather maps
- Isopleth analysis
  - Lightly at first being sure to fit the data, maintain some smoothness, establish continuity with previous maps.
- Data representativeness
  - Interpret the results, decide which features are significant on the analyzed map.
- Frontal Analysis
- Weather Analysis

Rules of Isopleths

- The interval between isopleths doesn't normally change.
  - Dash or color isopleths that don't match the interval
- Isopleths are continuous and should never fork or cross.
- Isopleths of the same value should never cross.
- Field is usually smoothed to be consistent with the spacing of the data analyzed.
- By agreement, saddle points, ridge lines, and trough lines are not used (see course notes).

Rules of Isopleths cont.

- Isopleths often do not close off, but run off the edge of the map.
- Do not contour data sparse areas.
  - Use dashed contours in these areas if data is present, but sparse.
  - If data is not present, do not contour.

- Always sketch isopleths lightly with a soft, easily erased pencil line.
  - Darken once final positions are determined.