



A tracking approach for short-term C&V forecasts

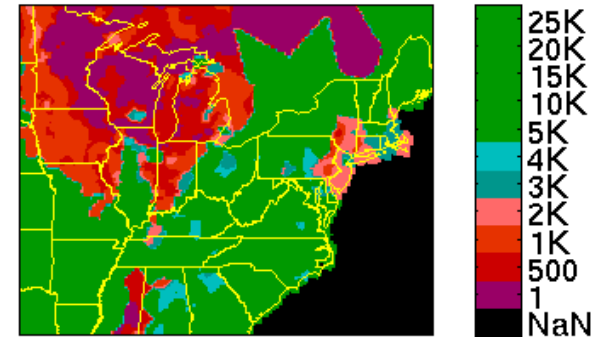
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**FPAW
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C&V forecasting challenge

- C&V forecasts typically rely on
 - NWP models
 - Statistical regression
- Both are dependent upon the **undersampled horizontal C&V fields, which exhibit large inter-station discontinuities**
- Neither capture local/regional trending aspect employed by expert forecasters
- Poorly resolved inter-station discontinuities pose a problem for tracking techniques which rely on extrapolation and/or trend
- New Approach: Create and track an analysis field of merged components which *correlate* well with ceiling or visibility

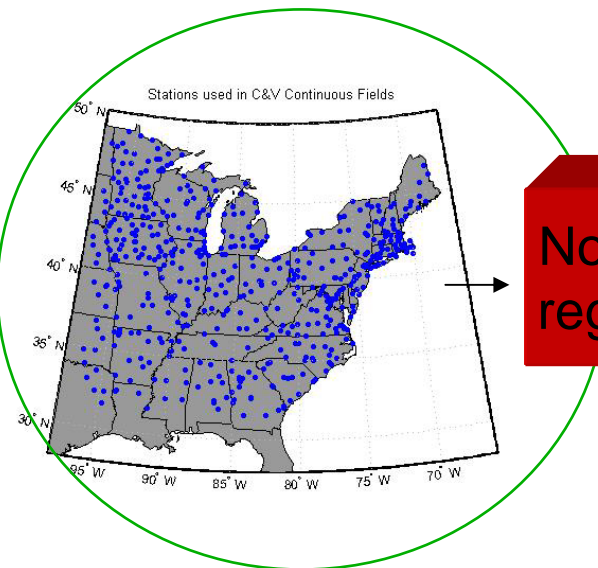


Ceiling analyses typically rely heavily on interpolation



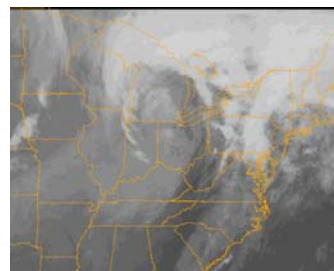
Creation of Continuous C&V Fields

Input Station Data

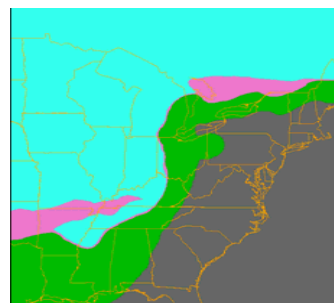


Non-linear regression

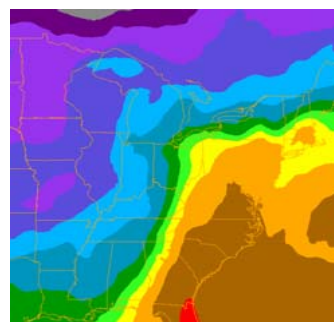
Weight →



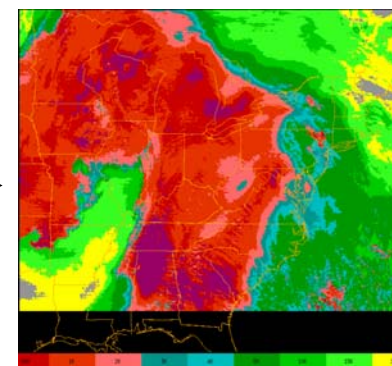
Weight →



Weight →



Ceiling Height



The value of ceiling or visibility at location Y is Z

Correlate ceiling & visibility with:

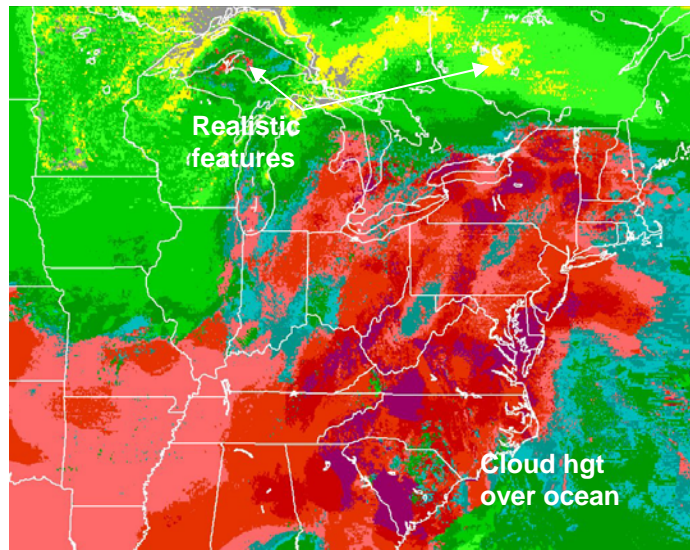
- 1-minute gridded fields of temp & dew point depression
- Radar reflectivity
- Precipitation type probability
- Satellite data
- Solar angle

cvGridder

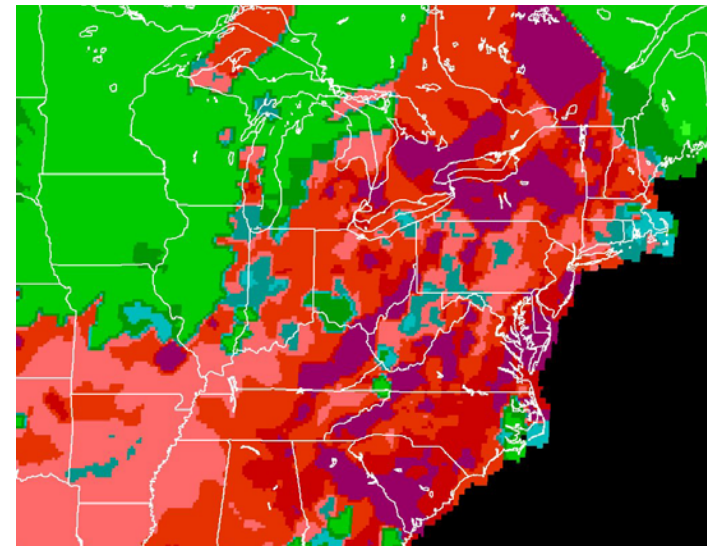


Ceiling analysis fields

Using correlated C&V “predictors”



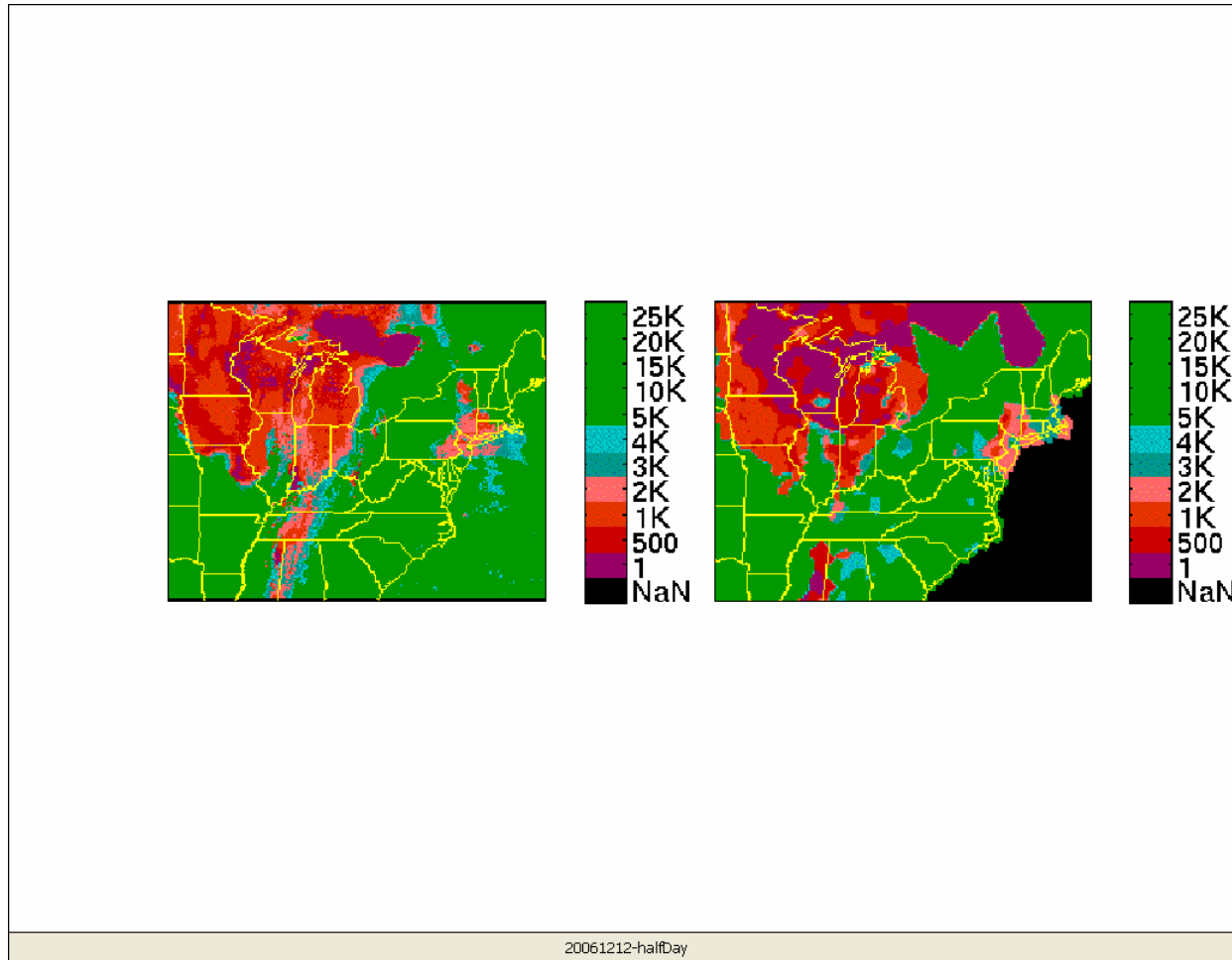
Interpolation





Loop of analyzed fields

12 Dec 2006





Forecast methodology

