International Association of Emergency Managers

Improved Tools for Emergency Managers Using the SPC Web Page

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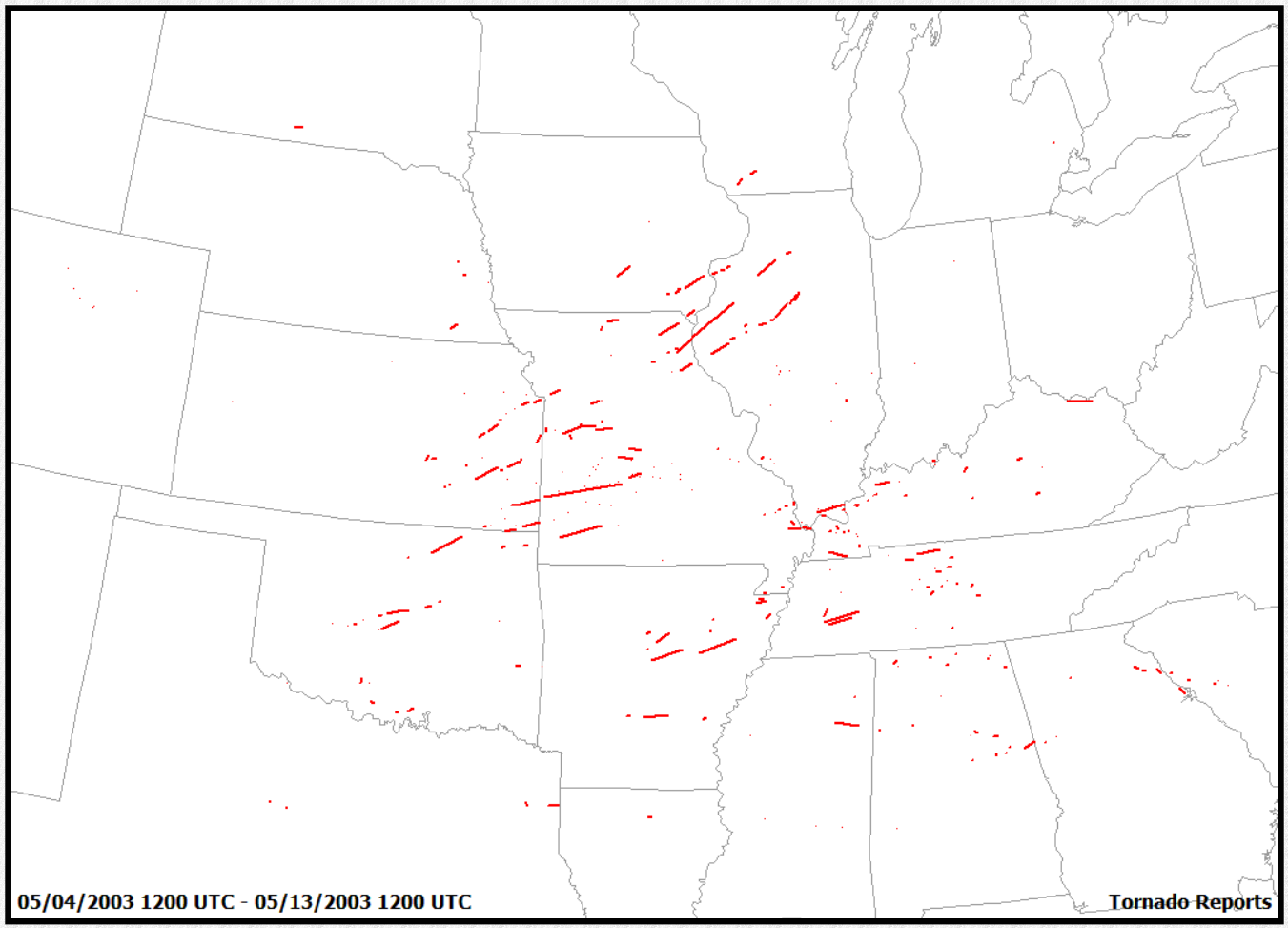
Preparation

At the National Severe Weather Workshop, EMs want basic meteorology to prepare for emergency response

NWS Severe Weather Paradigm

May 4-11, 2003 Outbreak



May 4-11, 2003 Outbreak

- 327 tornadoes
  - Kansas City, MO
  - Springfield, MO
  - Oklahoma City, OK
  - Memphis, TN
- 34 fatalities; 617 injuries

How do you prepare for such an event?

SPC Web Page

- SPC Products
- Forecasting Tools
  - Displays many parameters SPC forecasters use to issue outlooks, mesoscale discussions and watches
- Links to other NWS Web sites
  - HPC
  - AWC
  - CPC

Forecast Tools

- Allows you to create a composite-type map
- View maps having severe weather parameters similar to those used by SPC forecasters
- Surface and upper air maps
  - Upper air maps use RUC analysis

Go to web demo

Forecast Parameters

- Observations
- Basic Surface Fields
- Basic UA Fields
- Instability
- Deep Layer Shear
- Low Level Shear
- Storm Relative Winds
- Composite Indices
- Miscellaneous

Observations

- Regional Surface Chart
- Visible Satellite Image
- Composite Reflectivity
- Regional Watches/Warnings

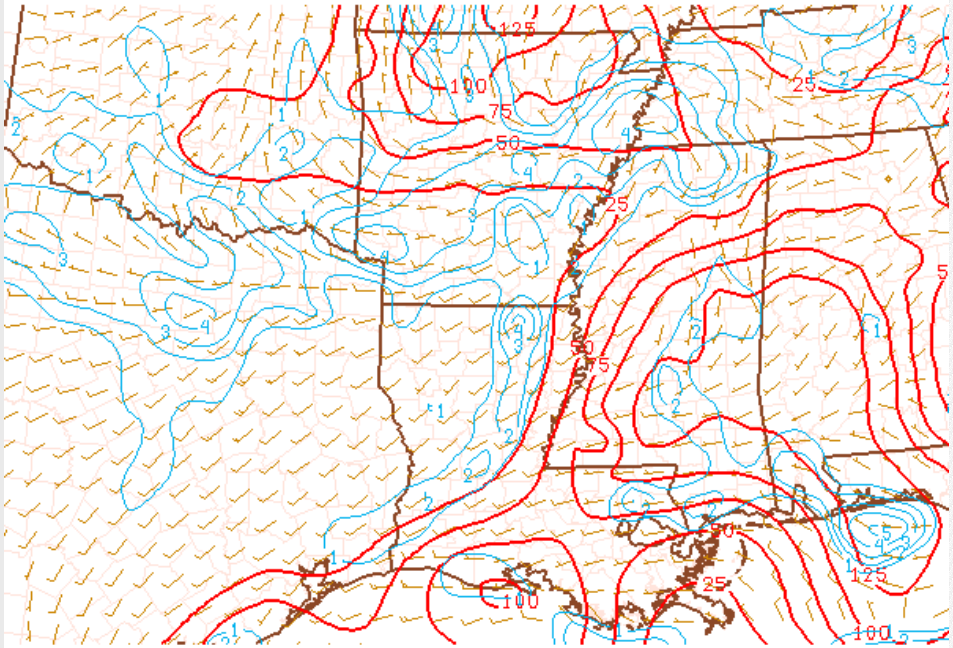
Basic Surface Fields

- MSL Pressure/Wind
- T/T_d /Wind
- Moisture Convergence
- ThetaE Advection
- 2hr Pressure Change

Basic UA Fields

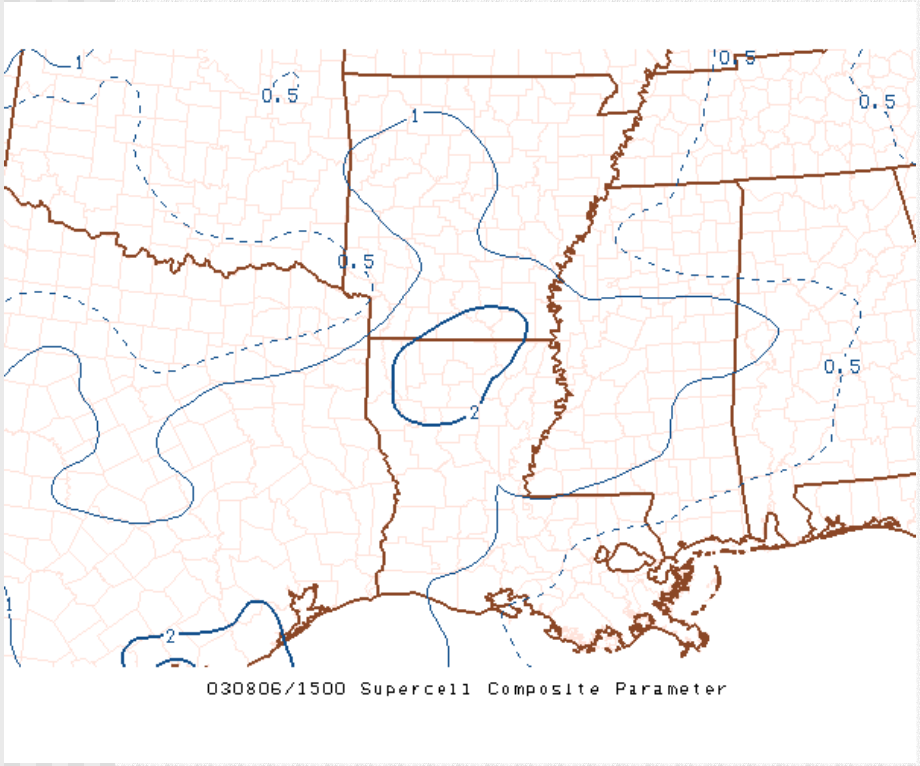
- 850 mb Analysis (5,000 ft)
- 700 mb Analysis (10,000 ft)
- 500 mb Analysis (18,000 ft)
- 300 mb Analysis (30,000 ft)
- 850 & 500 mb Winds
- Deep Moisture Convergence
- Precipitable Water

Instability



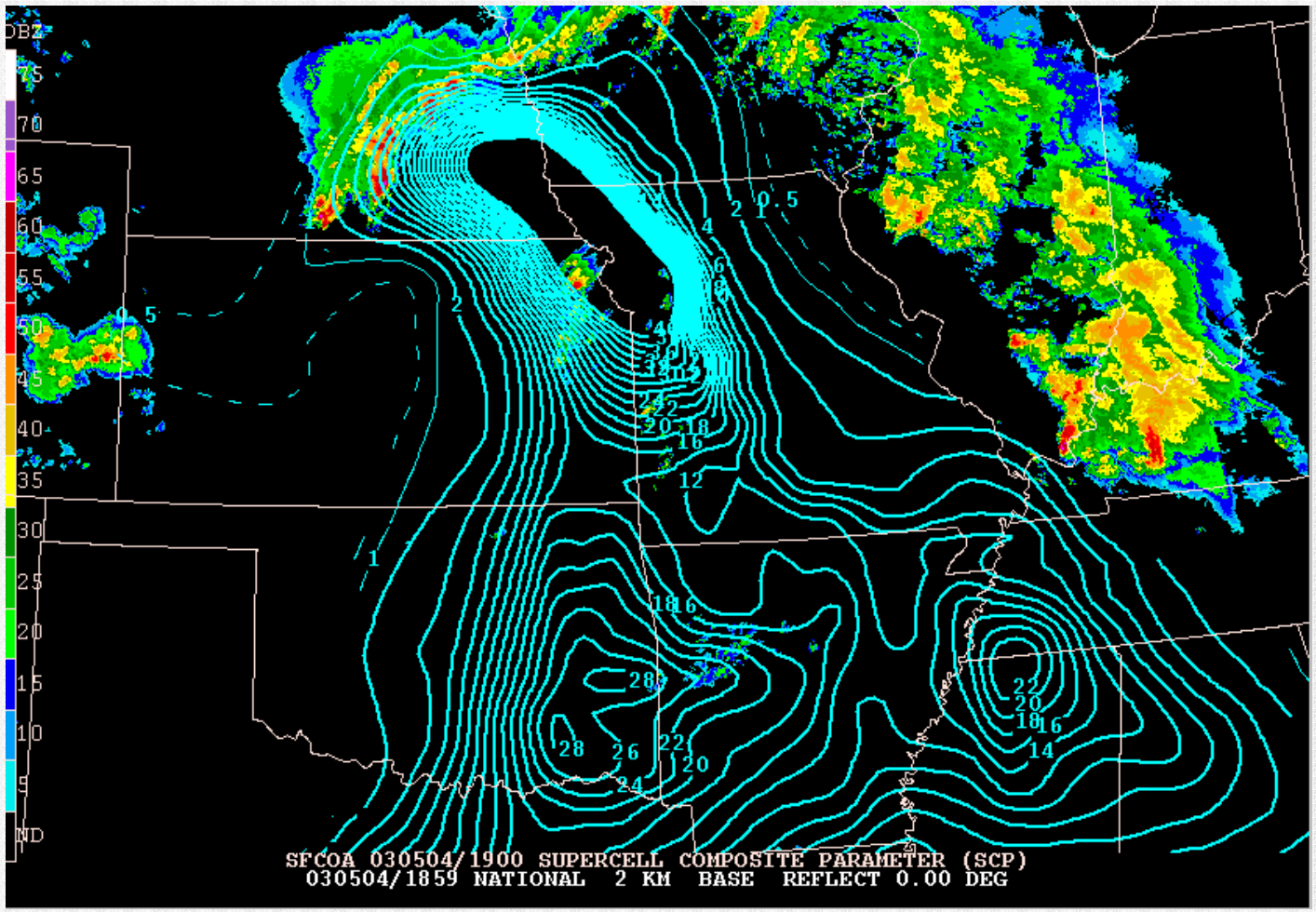
- Need to know where air will rise to help produce deep thunderstorms
- Warm, moist air mass

Composite Indices

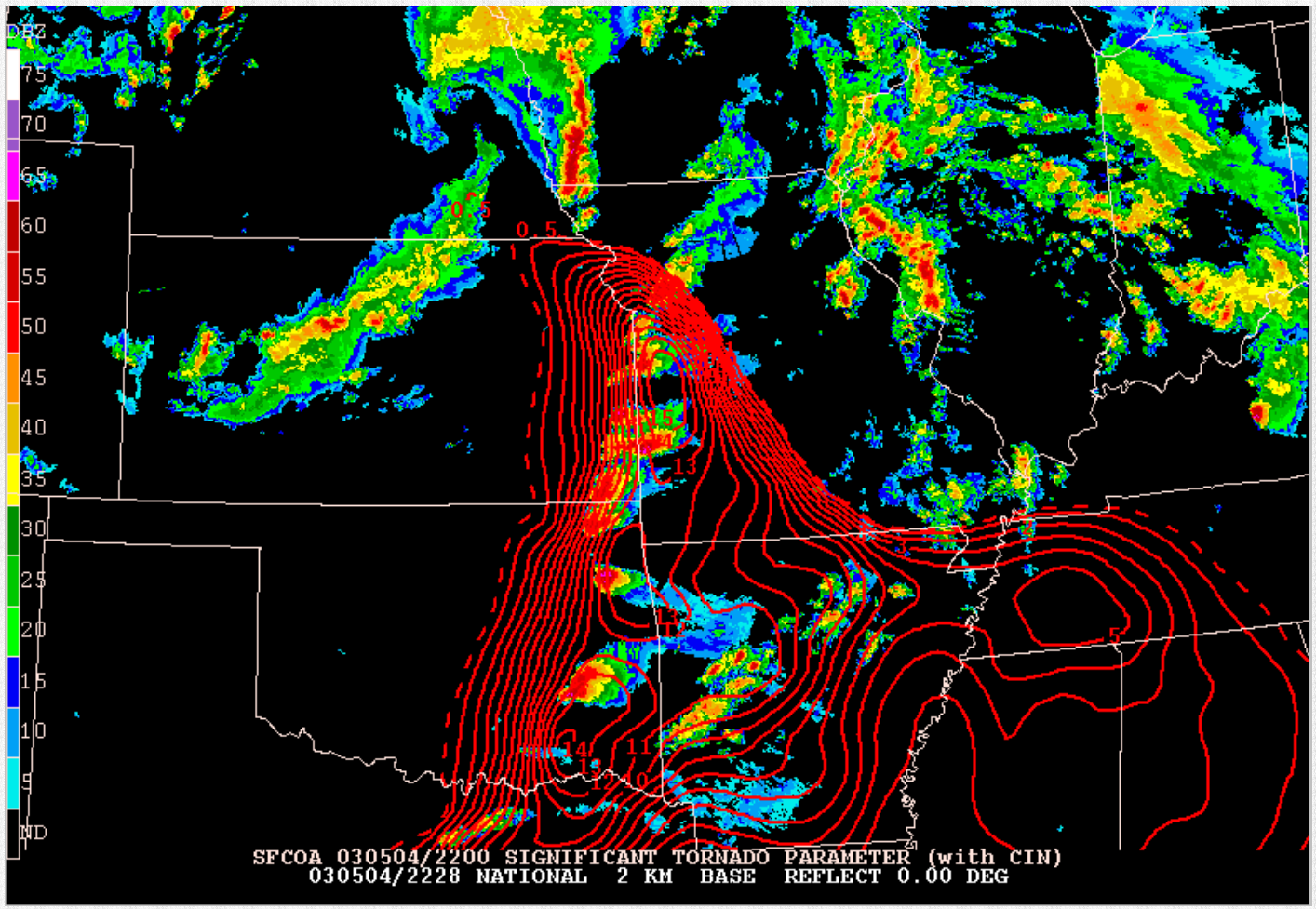


- Supercell Composite Index
  - Takes necessary parameters fpr supercell storms
- Significant Tornado Index
  - Locates area where large violent tornadoes may develop

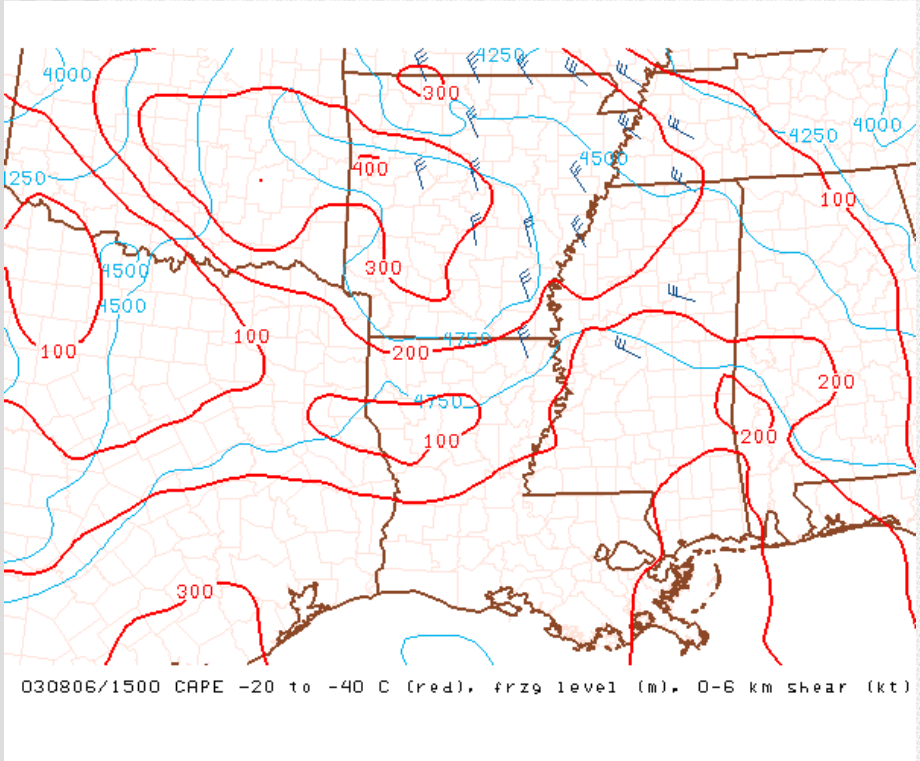
Supercell Composite Index



Significant Tornado Parameter



Hail Parameters



- depicts three forecasting parameters used to predict hail. They are CAPE in the layer from -20 C to -40 C, 0-6-km shear vector, and the freezing level height. Large CAPE in the layer from
- -20 C to -40 C favors rapid hail growth. 0-6-km shear in excess of 30-40 knots supports supercells with persistent updrafts that contribute to large hail production. Finally, lower freezing level heights suggest a greater probability of hail reaching the surface prior to melting, though melting impacts small hail much more than very large hailstones.

Summary

- SPC Web Site now has maps available
- Helps in monitoring areas for severe weather development
- Monitor areas during severe weather
- Reference maps for outlooks, mesoscale discussions and watches

Questions?

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