Impressions and Lessons Learned From Mesoanalyst Boot Camp

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Topics

- Structure of Boot Camp
- Key takeaways
- Helpful displays
- Duties of mesoanalyst
- Conclusions

Structure of Boot Camp

- Instruction Days 1-2
- Case work Days 3-4
- Wrap-up/Assessment Day 5

Goal: Accurately anticipate what the radar will look like in 2-3 hours and communicate specifically what/when/where to the public.

Key Takeaways

- Being a mesoanalyst involves having a different mindset
  - Equal in importance to the radar operator
  - Weather safety net for the office
  - Helps the office remain weather ready ***not*** weather reactive

Key Takeaways

- Maintain mesoscale awareness through an event
  - Don’t assume the weather will behave linearly
  - Stay in tune with trends in observations

Key Takeaways

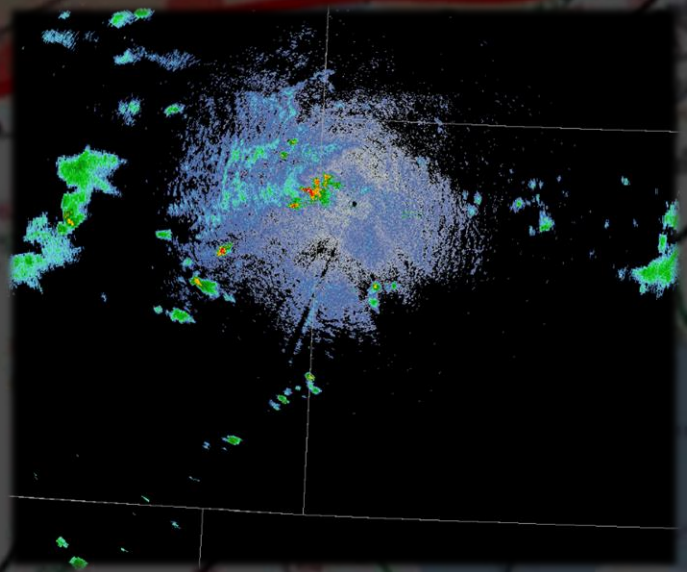
- Environment matters
  - Able to increase lead time for warnings
- Subtle boundaries can drastically change the expected storm behavior if overlooked
  - Differential mixing boundaries
    - Hot vs. warm
    - Moist vs. dry

Key Takeaways

- Pattern recognition
  - Not just in the upper air or surface pattern
  - Recognizing patterns in the sounding or hodographs
    - Help anticipate storm behavior
    - Aid in communicating the threats to partners
- Side note on hodographs
  - Disservice to yourself to not use them

Key Takeaways

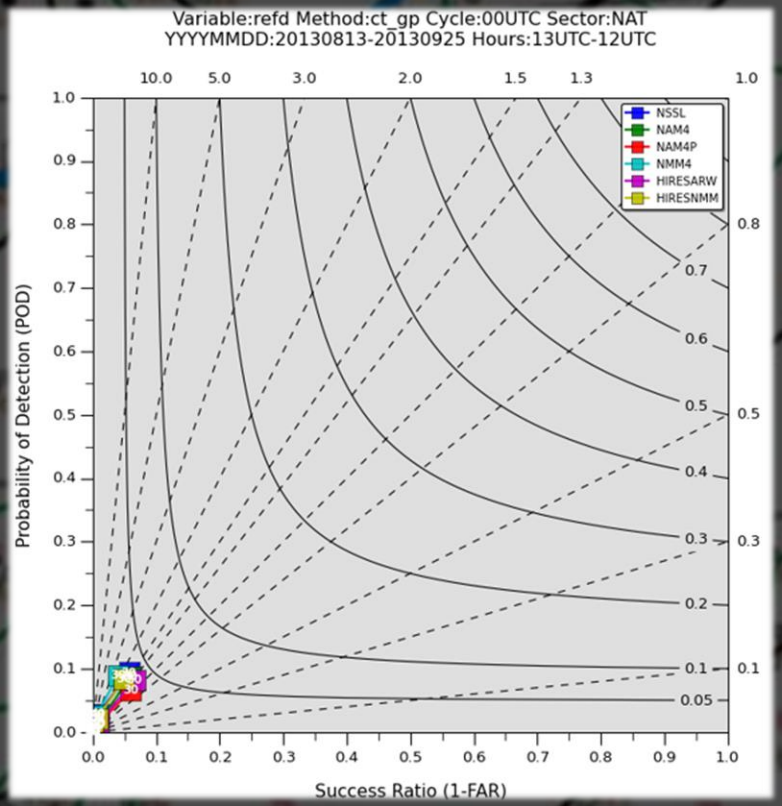
- Which do you have more displays of, radar or satellite data?
  - Indicative of what you are paying more attention to
  - Plethora of information you can glean from satellite data
- Radar
  - Focused on the present
- Satellite
  - Able to anticipate storm behavior
  - Shifts mindset from reacting to storms to being ready
  - Would your mesoanalysis be crippled without it?



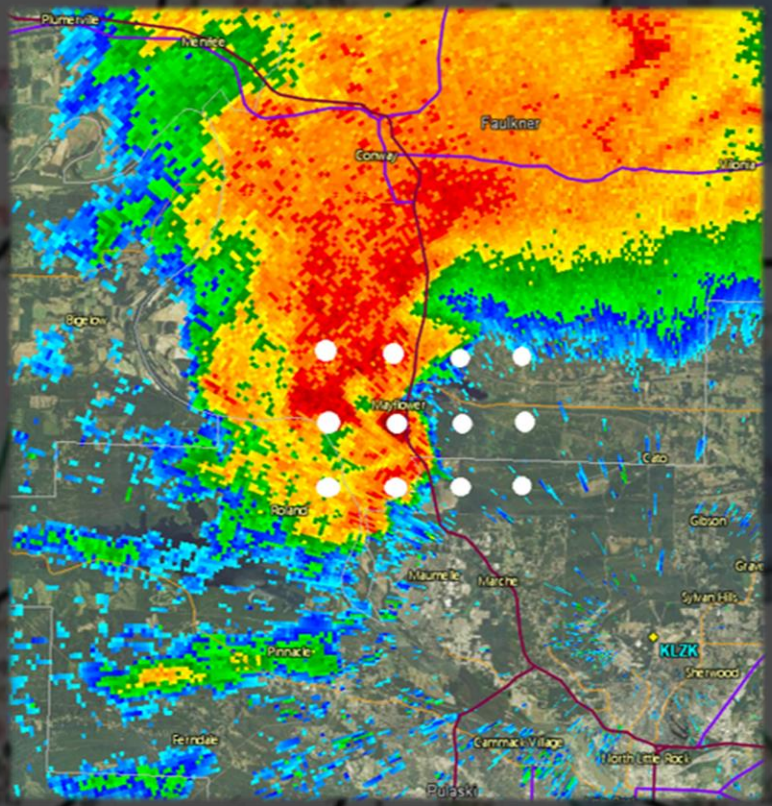
Key Takeaways

- Keeping CAM output in perspective

National Stats at Grid Point
For 30 dBz or higher
8/13/13 – 9/25/13



Adapted from Jirak and Thompson

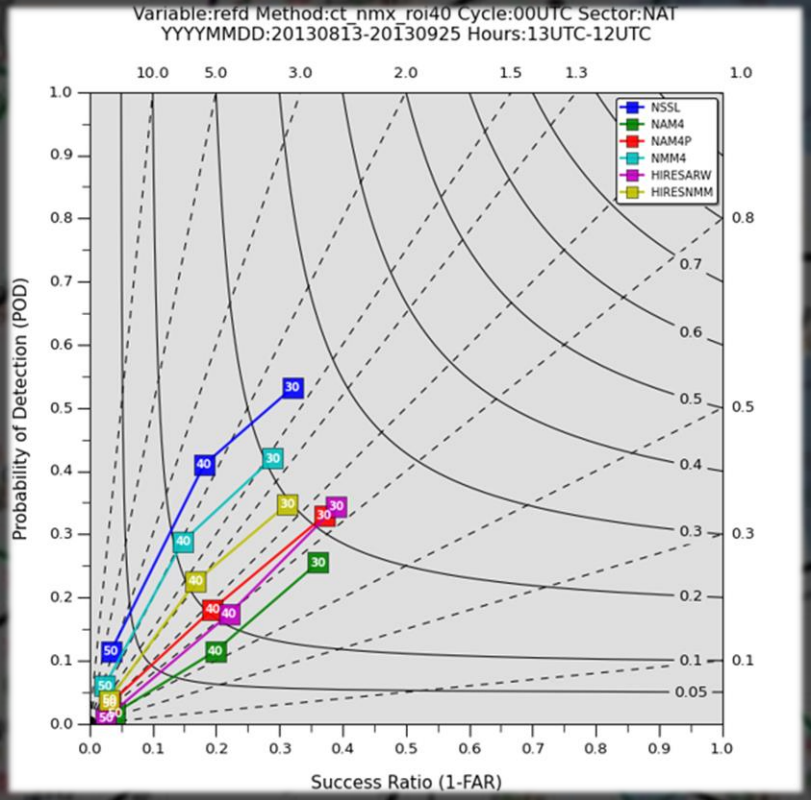


Adapted from Jirak and Thompson

Key Takeaways

- Keeping CAM output in perspective
- Using a neighborhood approach for verification showed increased improvement in CAM verification

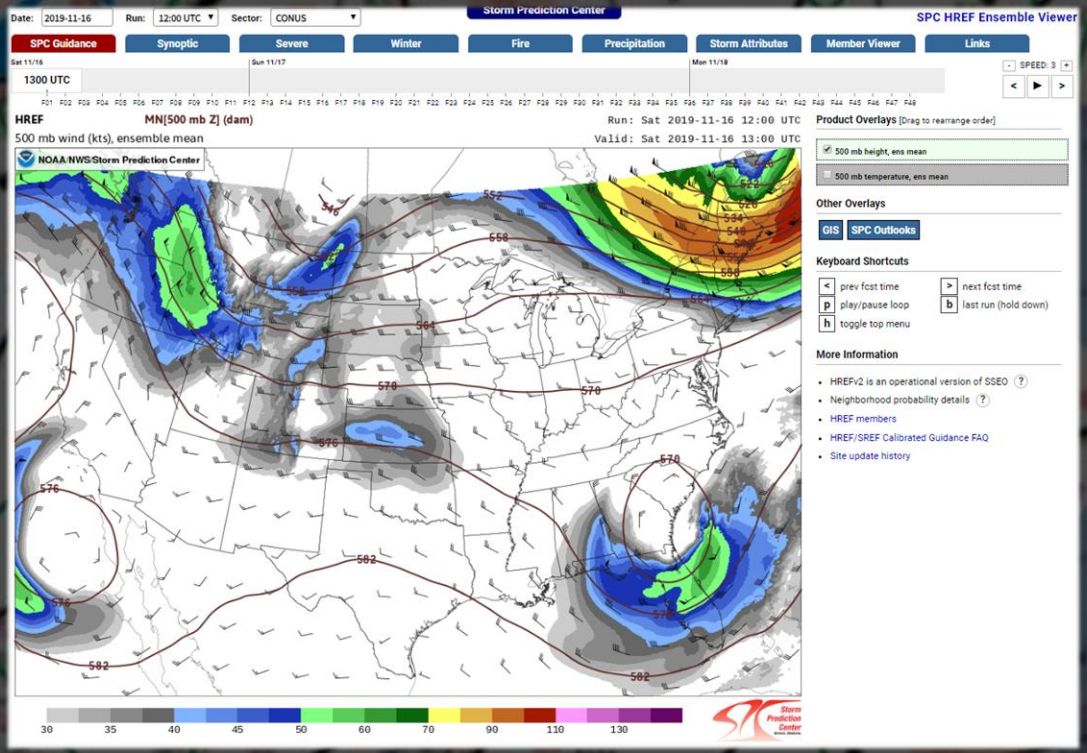
National Stats 40 KM Neighborhood
For 30 dBz or higher
8/13/13 – 9/25/13



Adapted from Jirak and Thompson

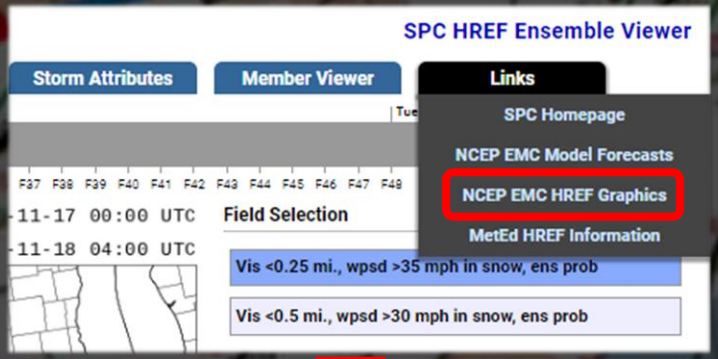
Side Note on HREF

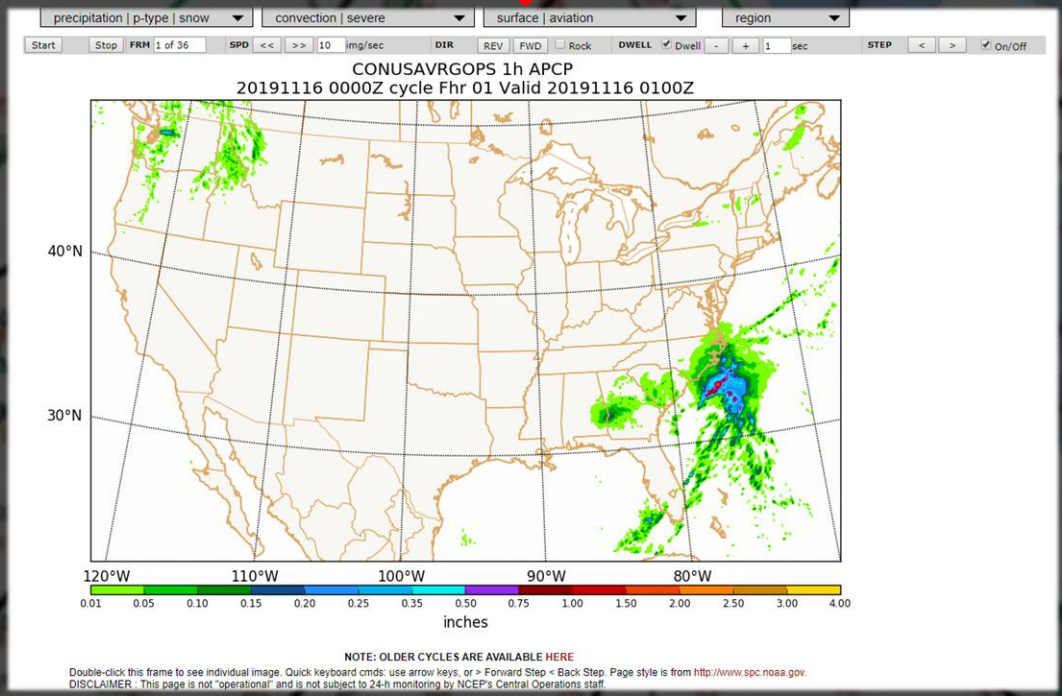
- One of the best ways to view CAM output.
- The SPC site has probabilities for:
  - QPF
  - Snowfall
  - Blizzard conditions
  - Updraft helicity
  - CAPE
  - Fosberg Index (fire weather)



Side Note on HREF

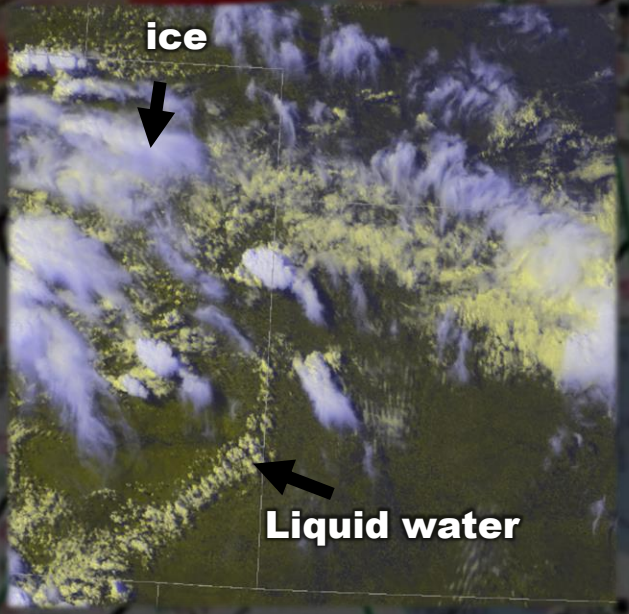
- The NCEP website has probabilities for:
  - Aviation
  - Severe weather
  - Precipitation type
  - Snow amount



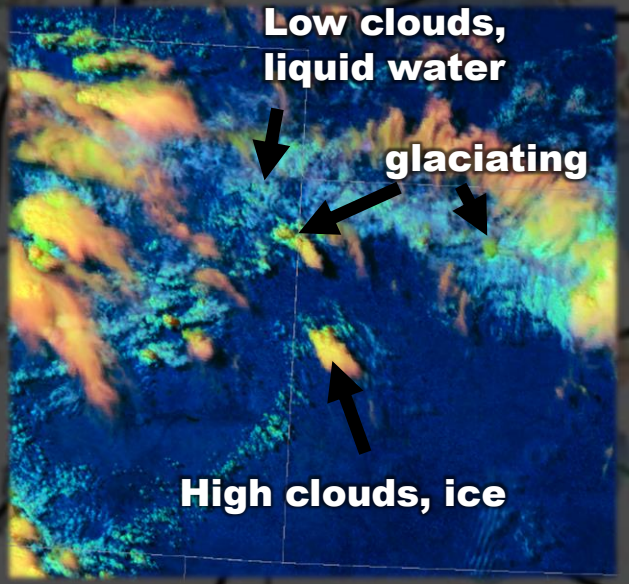


Helpful Displays

- Day cloud phase
  - Distinguish liquid water from ice
  - Under RGB composites

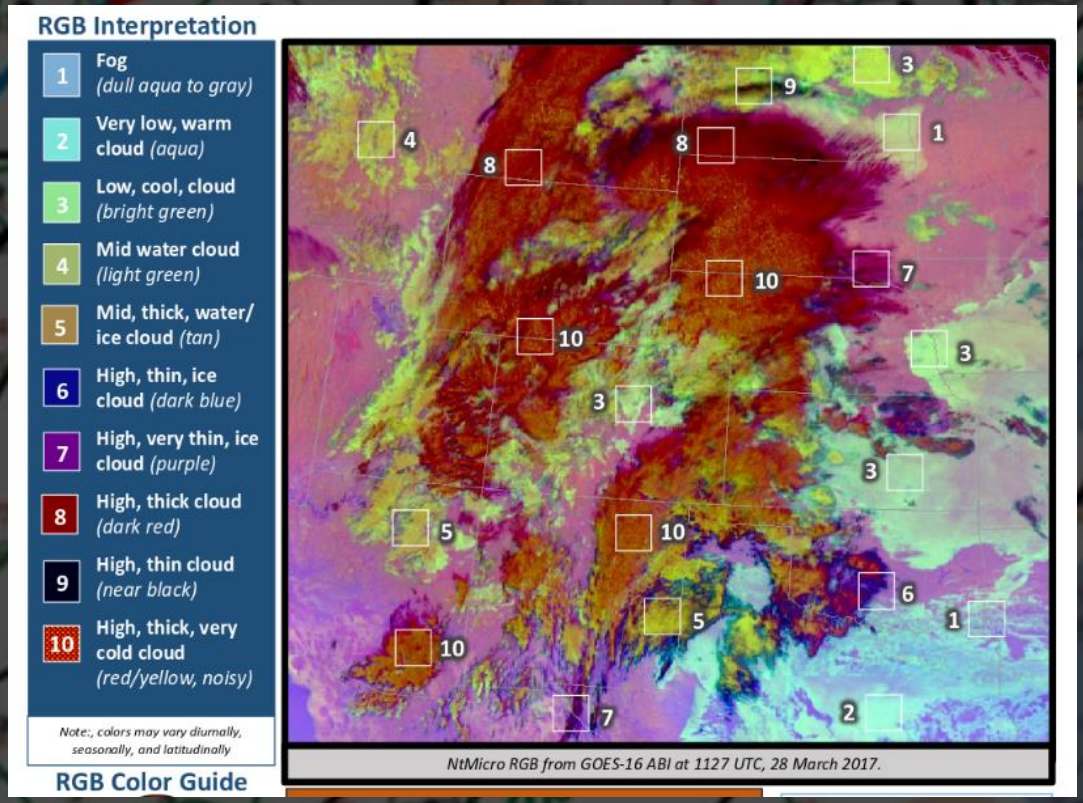


- Daytime cloud phase distinction
  - Evaluate phase of cooling cloud tops
    - Determine growth, decay, glaciation
  - Under RGB composites



Helpful Displays

- Nighttime Microphysics
  - Distinguish fog from low, mid, or high clouds
  - Help determine if ice is present in the clouds
  - Under RGB composites



Helpful Displays

- Meso sectors
  - One minute data is crucial
  - Provides a more complete picture

What does a mesoanalyst do?

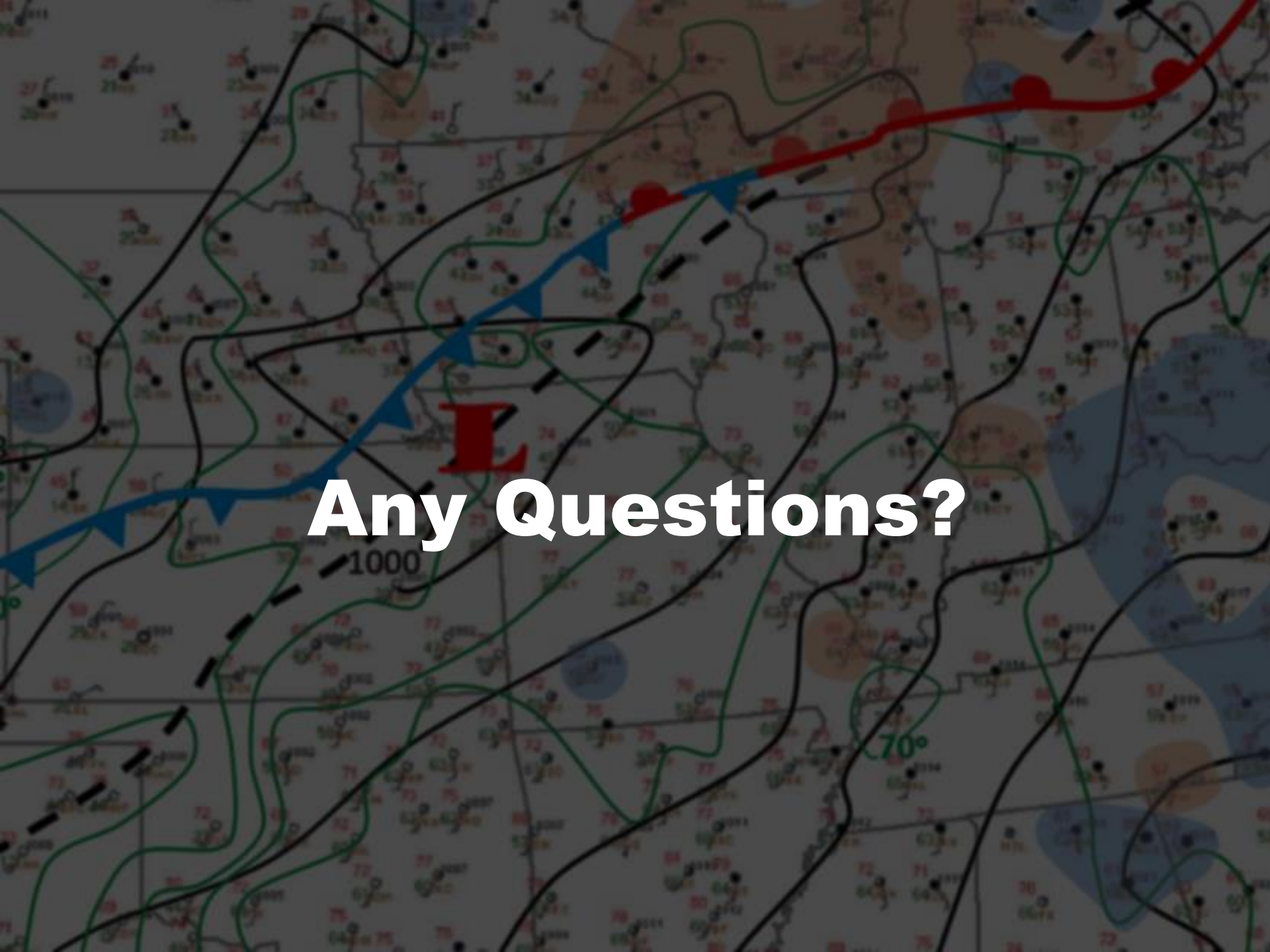
- Monitors the mesoscale for subtle features
  - Surface observations
  - Satellite data
  - Radar data
  - SPC mesoanalysis data
- Based on data, anticipates what will happen in the next 2-3 hours
- Communicates with radar operator and forecaster

Conclusions

- Weather forecasting is not dead!
- Goal of the mesoanalyst: anticipate what the radar will be showing in 2-3 hours
- Mesoanalyst is the weather safety net
  - Be proactive not reactive
- Leverage satellite data
- Hand analysis helps

Where to go from here

- Practice mesoscale analysis wherever there is hazardous weather.
- Show fellow staff how important mesoscale analysis is.
- Offer mesoscale analysis assistance to offices affected by hazardous weather.



Any Questions?