



## **CAPS 4 km Ensemble and 1 km Deterministic Forecast for NOAA HWT 2010 Spring Experiment**

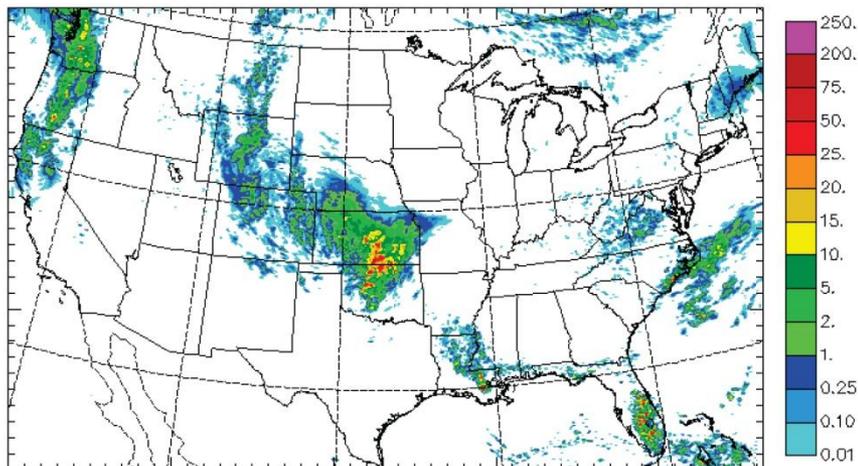
**Fanyou Kong**  
Center for Analysis and  
Prediction of Storms  
The University of Oklahoma

# System highlight

- Full continental US domain (4640 km x 2880 km)
- Daily 30 h forecasts: 26-member storm-scale ensemble forecasts at **4 km** grid spacing and one deterministic forecast at **1 km** grid spacing
- Radar data from 140 WSR-88D radars across the US are analyzed into the forecasts
- Ensemble forecast (4 km): from three NWP models—19 WRF-ARW, 5 WRF-NMM, 2 ARPS members
- Deterministic forecast (1 km): WRF-ARW model
- Experiment ran from April 26 to June 18 (on weekdays)
- Athena, a Cray XT4 supercomputer at NICS/U. of Tennessee (over 18000 cores), was dedicated 6 h each day to run the forecasts

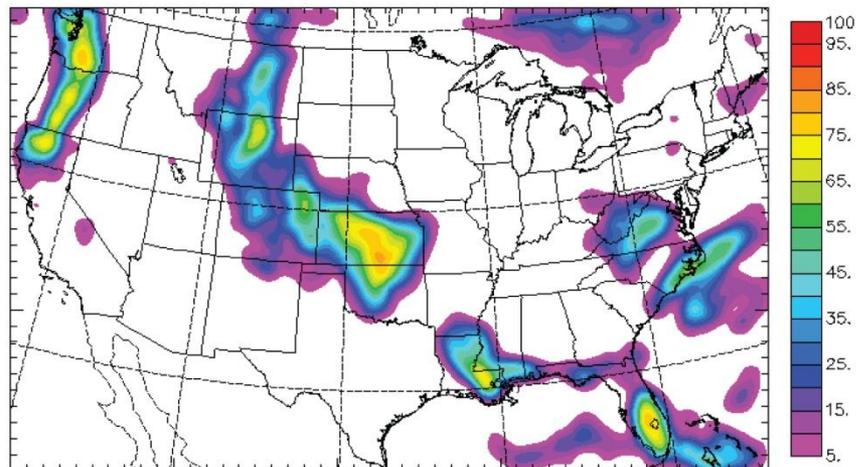
# CAPS ensemble product

- <http://forecast.caps.ou.edu>
- [http://www.caps.ou.edu/~fkong/sub\\_atm/spring10.html](http://www.caps.ou.edu/~fkong/sub_atm/spring10.html)
- **4 TB** data per day archived (A total of **36 days** complete dataset)

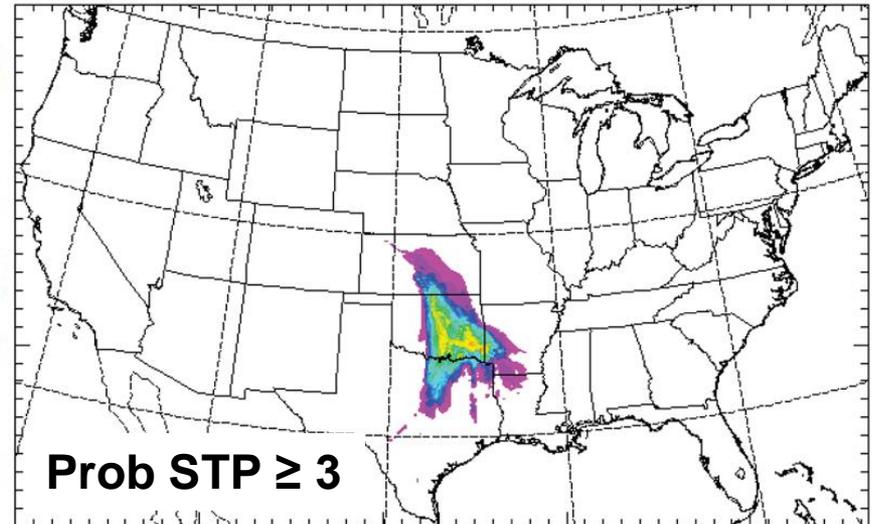
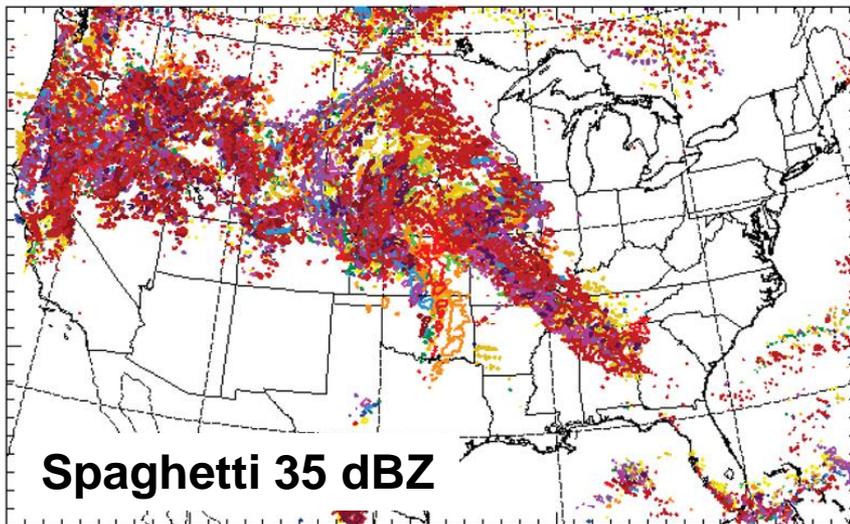
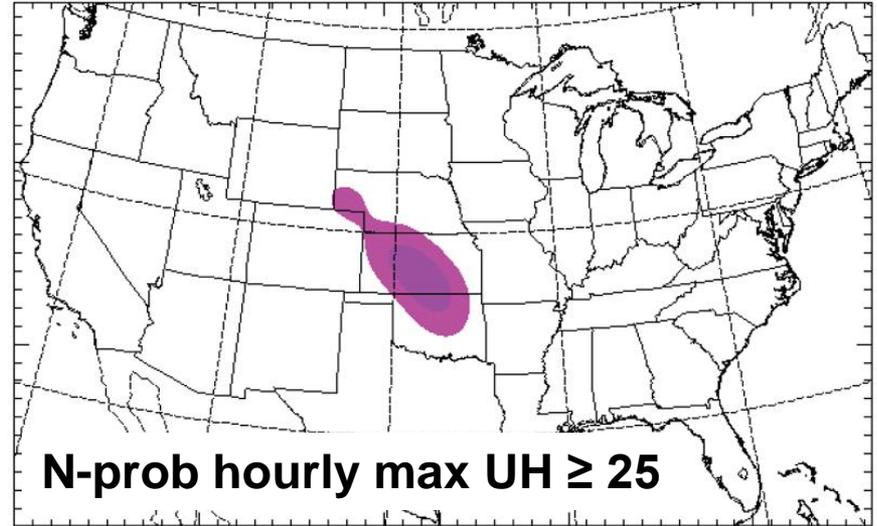
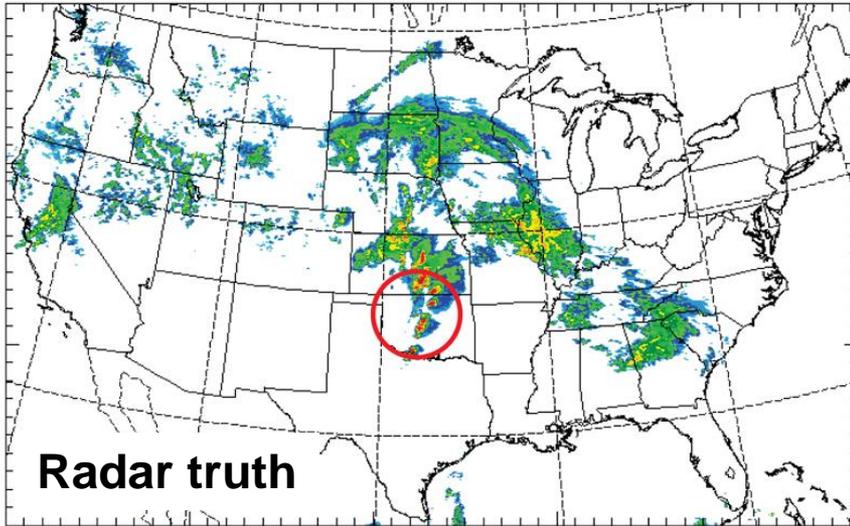


Probability matching mean:  
1 h accumulated precipitation  
(24 h fcst, valid 00Z May 20)

Neighborhood probability:  
1 h accumulated precipitation  $\geq 0.25$ "

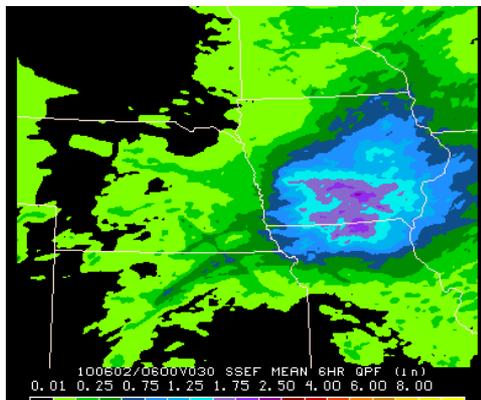


# May 10 OKC Tornado—valid 22 UTC

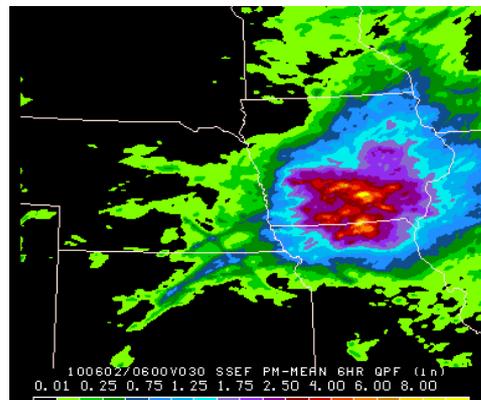


# 0-6Z accumulated precipitation: 30 h forecast (June 1, 2010)

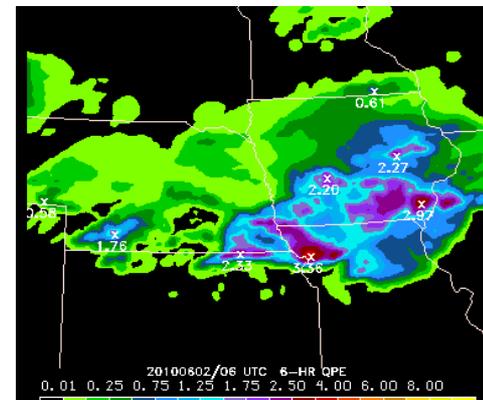
SSEF mean



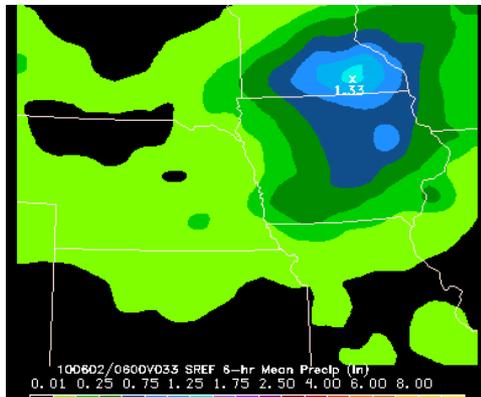
SSEF prob match



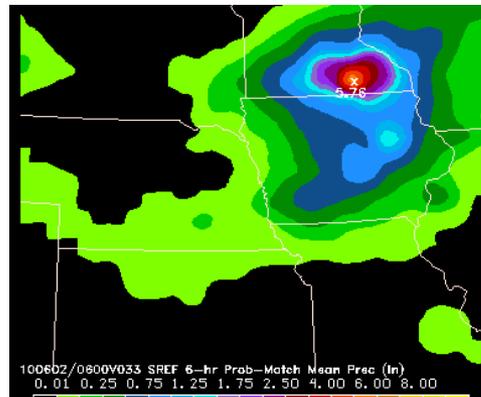
QPE



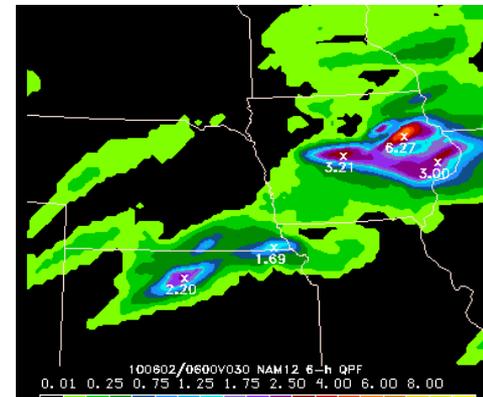
SREF mean



SREF prob match



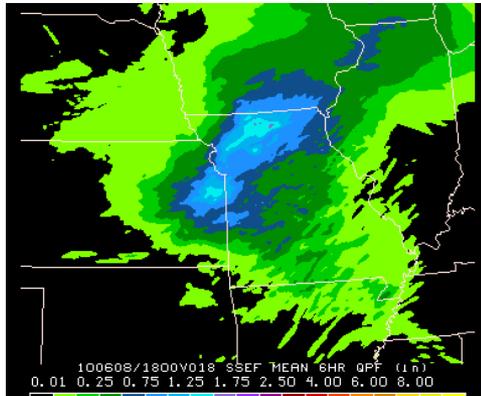
NAM



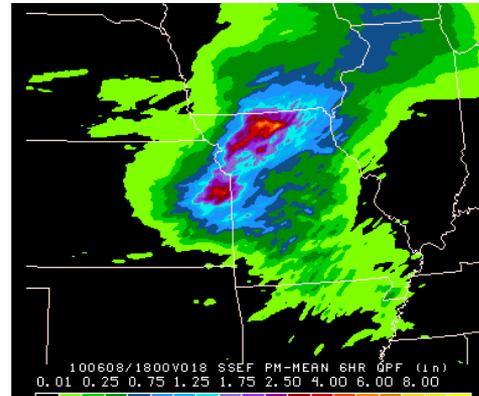
HWT images

# 12-18Z accumulated precipitation: 18 h forecast (June 8, 2010)

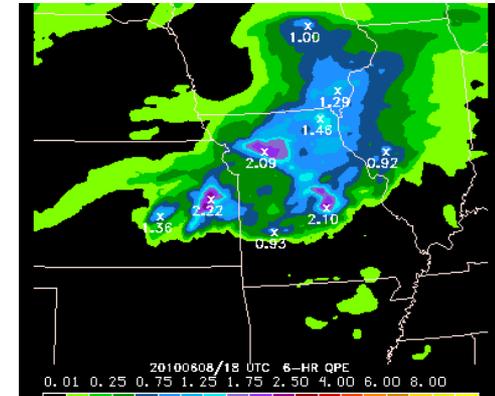
SSEF mean



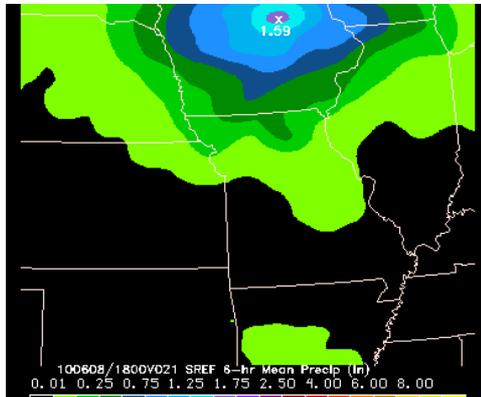
SSEF prob match



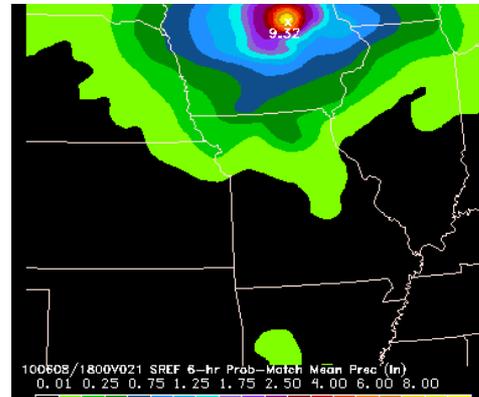
QPE



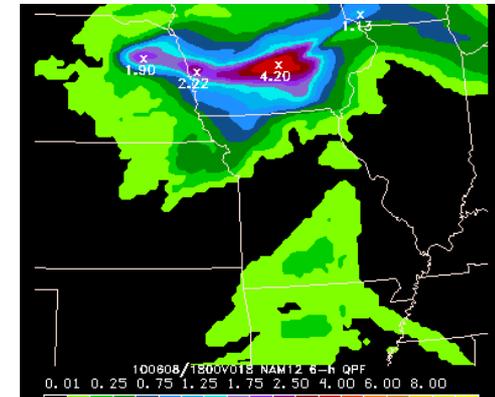
SREF mean



SREF prob match



NAM



HWT images

# **CAPS SSEF was a “transformational” event for warm season QPF**

**-remarks from HPC participant to the NOAA HWT 2010 Spring Experiment**



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