Campaign Forecast, Saturday April 23

Submitted by avarble on Sat, 04/23/2011 - 12:48

- Central Facility

Elevated convection was observed over the SGP between 9Z and 12Z this morning associated with a low level jet bringing Gulf moisture northward over the front. Lapse rates limited the strength of the convection. The front is expected to move southward and set off strong convection in southeastern Oklahoma and possibly back into Texas later this afternoon.

A low level jet is expected to return and strengthen tonight bringing the chance of elevated convection to fire along the nose of the jet over the SGP site. The best guess for timing of the is 9Z to 15Z Sunday. By 0Z Sunday, a much stronger line of convection is anticipated to fire from south-central Oklahoma northeastward toward southwest Missouri. The strength and mode of this line varies greatly between different models.

With an approaching jet max and increased upper level support, elevated convection is again likely over the site late Sunday night, although the cover and evolution of this precipitation will likely depend strongly on the evolution of the strong convective line to the south and southeast. Models are putting the best chance for precipitation over the site from 9Z to 12Z on Monday at the current time.

On Tuesday, a stronger trough digs into Oklahoma giving a great opportunity for convection over the SGP during the later afternoon and evening on Tuesday through Wednesday morning.

Forecasts

Time of Day:
Morning
Day 0:
04/23/2011
Forecast for Day 0:

Isolated elevated convective cells were observed on radar this morning between 9Z and 12Z over the SGP site. The surface front is well to the south and progressing southward with cool and dry air coming in from the northeast over the site. Overriding this cool, dry air is a low level jet between 850 and 700 mb bringing in significant Gulf moisture. This combined with the moderate-steep lapse rates aloft lead to the initiation of the convective cells this morning.

With the front progressing southward this afternoon, strong thunderstorms are forecasted to form along it in southeastern Oklahoma and back southwestward into Texas. Going into the overnight hours, thunderstorms are forecasted to form north of the front once again as the low level jet once again establishes itself.

Day 1:
04/24/2011
Forecast for Day 1:

With the low level jet strongly reestablished and greater instability than Saturday morning, a strong probability exists for elevated convective precipitation over the SGP site between 9Z and 15Z. Although the 12Z NAM was not available at the time of the attached PowerPoint and hence is not shown, it produces especially heavy precipitation to the east of the site between 9Z and 12Z.

The recently released GFS 12Z run continues the trend of earlier GFS runs that produce a line of convection between 21Z and 0Z with the line reaching maturation by 3Z from south-central

Oklahoma northeastward through northeast Oklahoma and into Missouri. The NAM, on the other hand, produces a much more broken line with isolated cells in the same region, namely east of Tulsa back down through south-central Oklahoma with the same timing. The 9Z SREF shows strong agreement of the timing and location of this line, but the magnitude varies significantly between some models.

Day 2:
04/25/2011
Forecast for Day 2:

Between 6Z and 12Z on Monday, the 12Z GFS run builds the line of convection westward across southern Oklahoma, blocking the feed of moisture for possible elevated convection in northern Oklahoma which somewhat limits the elevated convection although precipitation is still forecaster over the SGP. The 12Z NAM, on the other hand, does not have this line of convection to the south and sets up a new line over the SGP between 6Z and 9Z. This line moves out by 15Z.

This event very early on Monday has better synoptic forcing than early morning Sunday with a jet max moving in to reinforce the trough aloft, but the large spread between models means that this situation will need to be monitored closely moving forward.

Extended Outlook:

A stronger trough than this weekend is projected to dig into Oklahoma on Tuesday, bringing a good chance of precipitation during late afternoon and evening on Tuesday through Wednesday morning. This system has the potential to bring warm, moist air back northward to the SGP at the surface for the first time in several days. After this trough moves through, precipitation chances should be very low for a couple days.

Attached files:

1. MC3E Weather Briefing 20110423.ppt