

Weather Briefing May 30 Presentation File and Forecast

Submitted by sgiangrande on Mon, 05/30/2011 - 08:39

- [Central Facility](#)

Primary weather feature for the day is the chance for a squall-line to develop over campaign facilities into the overnight hours on Monday into Tuesday in advance of a strong trough / cold front progged with trough base to track along a nonoptimal northerly position of the SGP CF for deep convective storms. Best chance for precipitation associated strong southerly flow, convection initiating on the dryline and eventual catch-up of the cold front in the northern plains. During the mid day, chances for convection to fire south into Oklahoma along DL are limited due to strong capping inversion, chance for lingering clouds to undermine some surface warming. However, SPC and other local NWS forecast offices are similar in suggesting severe storm event with an evolution to NAM and GFS solutions that are surprisingly consistent with phase timing of the system in firing storms near western Nebraska by 00-03 UTC time frame. Main discrepancies in model solutions appear to be with the likelihood of precipitation over the CF proper, linked to the availability of moisture and dynamical support, with the NAM tending to have the precipitation just miss the facility and the GFS expecting higher amounts (as has often been the story throughout the campaign). Strong CAPE and lack of turning of the winds with height on profiles suggest evolution to be more of severe squall-line sort than isolated supercell development.

Nevertheless, the largest concern for operations is the strong winds expected associated with this strong trough and tight pressure gradient. Winds for Nebraska near mid-afternoon well in excess of ER-2-type limits for speed and cross-wind sheer, exceeding 40 kt gusts and 25 kt sustained for much of the afternoon hours. The threat of afternoon storms lingering with unknown duration and evolution (plausible that both models are suggesting long-lived squall-line type feature with some trailing stratiform) is also detrimental for landing of the aircraft following precipitation intercept. Conditions not excepted in the models to clear at the AFB until early morning hours (3-6 UTC) at earliest when squall-line finally exits the region.

Forecasts

Time of Day:

Morning

Day 0:

05/30/2011

Forecast for Day 0:

Windy; Clouds over the site associated with early morning precipitation (low level jet) that appear to have some staying power for a few hours. Expected to clear out for possible dryline convective development in the later afternoon, starting from west and south. (After the fact edit notes that cloudy conditions lingered for much of the day and planned Citation cloud mission ended better than expected and launched earlier when prompted by forecasters expecting to catch some of this cloud deck expecting it to be gone by mid afternoon; Yet, clouds seemed to favor some additional development from the southeast part of the state and some help from the dryline convergence at times for firing additional cirrus to accompany lower-level stratus deck that lingered into 20 UTC or so; Clouds did not typically clear until much later, when mostly cirrus with some mixed afternoon shallow convection prevailed - at times quite impressive)

Bigger show is for convection to develop mid-afternoon along the dryline and overnight associated with the eventual migration of the cold front into the central plains. Chances still low, expecting strong cap to mitigate dryline convection and cold front to weaken and stall over Oklahoma by early morning Tuesday.

Day 1:

05/31/2011

Forecast for Day 1:

If precipitation does not fire, expect some possibility for afternoon storms along a stalled cold front draped across Oklahoma, especially to the south of that boundary in the better moisture as it migrates northward throughout the mid to later afternoon.

Day 2:

06/01/2011

Forecast for Day 2:

Some hints for convection to fire associated with some moisture return northward and expectations of shortwave troughs in advance of the next larger trough to the west.

Attached files:

1. [5_30_2011_WXBrief.ppt](#)