

## Met briefing, AM 041102

### Overall Weather Outlook

An extended cold front stretches south southwestward from the four corners of OK, Arkansas, Louisiana and Texas. At upper levels (500 mb) the trough is located more or less over El Paso, Texas (western part of the state). A surface wave has developed along the cold front, bringing warm moist air into our area with thunderstorms starting around 2 AM this morning. A big cell was sitting over us at about 7 AM, with substantial rain and some thunder activity. Other convective systems could well develop along this front during the day, bringing more rain and possible thundershowers to our area. However, I believe the biggest rain activity for the day is behind us (as of 8 AM). Some shower lines can be seen to be developing on the radar, though I do not expect any more massive systems today. The cold front will pass through our area some time after noon, later than expected from yesterday's forecasts. As has been the case throughout the history of this major trough, the new model runs are slowing down its eastward progress yet again. The effect of this slowdown, however, simply means that we will have showers later in the day today than we expected yesterday. We expect some stiff winds late in the day after the frontal passage, and cooling temperatures. No rain tomorrow, with moderate winds. The expectation is for clear or partly cloudy skies through the weekend.

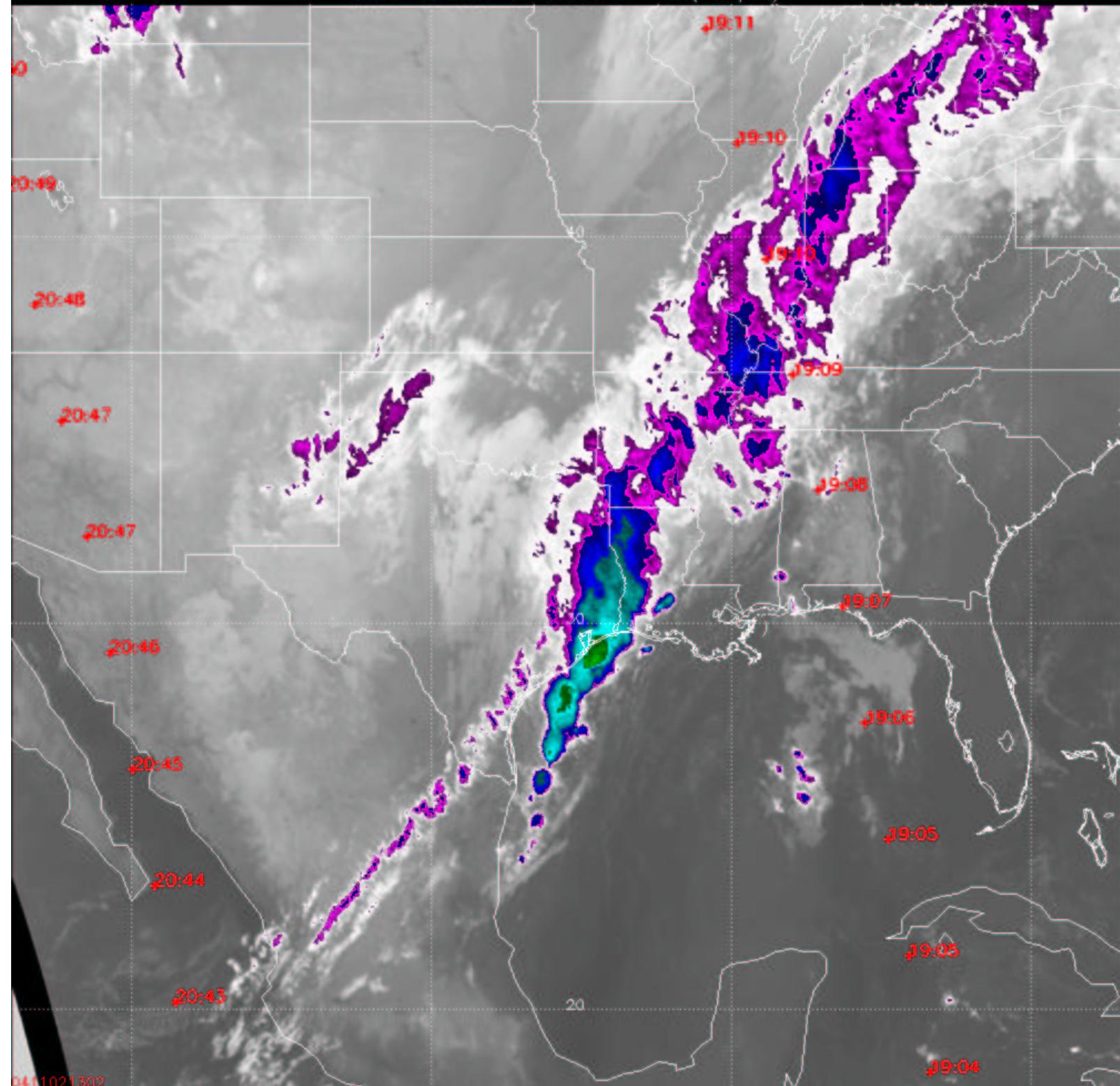
The first plot is an infrared picture from this morning, showing the big system over us, with brightness temperatures at cloud top rivaling tropical systems (-70C). You can see the bend in the line of clouds north of us, reflecting the development of the wave along the cold front.

### Science implications.

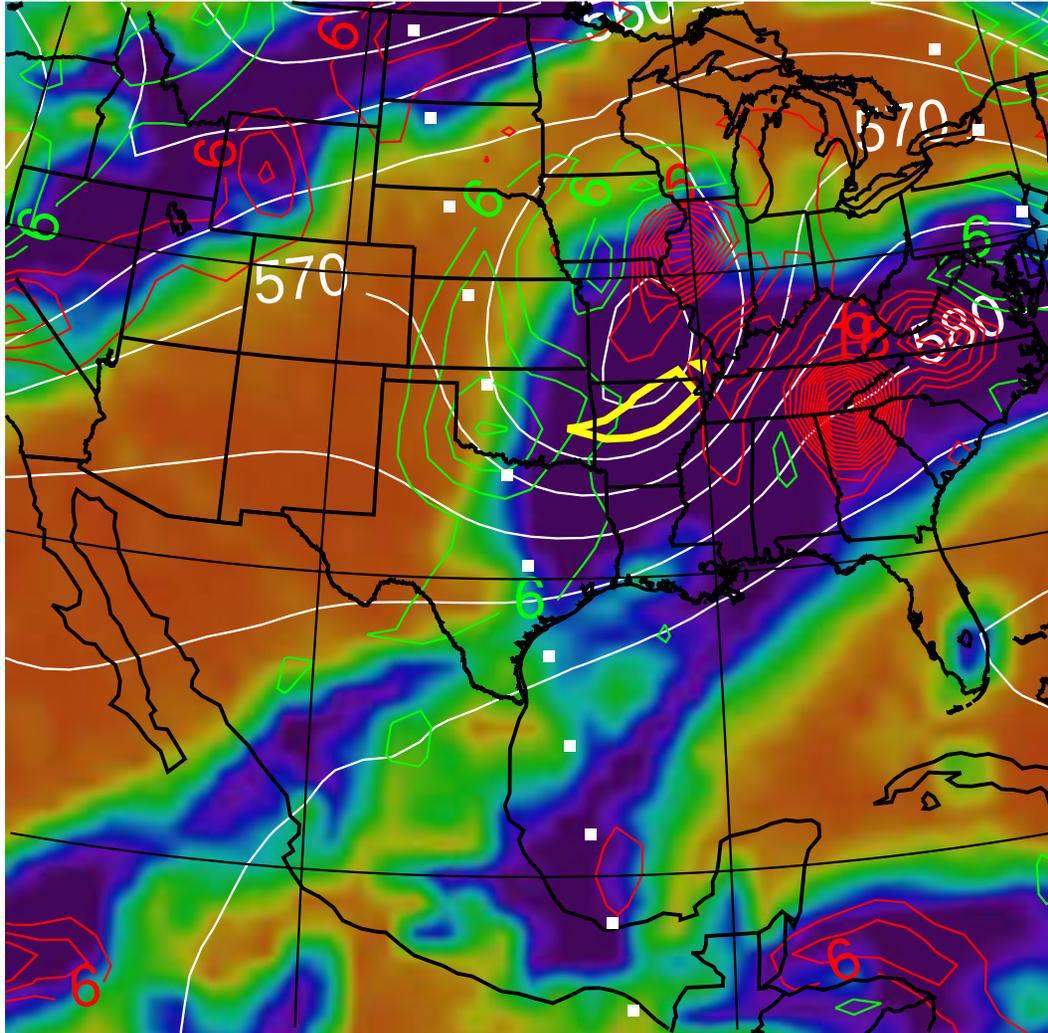
For tomorrow, the slowdown in the model runs is reflected in the second and third plots, which show total cloud field tomorrow at 6 PM for two runs initialized at 6 PM last night and noon yesterday. You can see that the 500mb low has backed off substantially. The implications for our flight are most obvious at 300 mb (fourth plot, here shown valid at noon tomorrow – a bit closer to our flight time). The depression in the tropopause associated with the low is right over the Aura track. This should be an interesting science as well as validation flight. Total cloud is shown in the fifth plot for noon tomorrow. Most of the cloud is low or boundary layer cloud. Unless this low backs off yet again (!! ) we should be able to reach clear zones, especially with the negative vertical velocity to the north of the cloud shield. Comparison of the runs initialized at 6 PM last night and midnight last night shows no shift in the position of the upper level low at either 500 or 300 mb.

For Friday, the total cloud field shows mostly clear over the land, with mostly boundary layer and low clouds over the Gulf. The ridge to the west has advanced relative to previous runs. My take is that this basic pattern is valid, but the model runs are still converging at this. The European model (not shown) is even faster than the NMC GFS in advancing this ridge.

GOES-12 2004-11-02T1302 Tbrt(10.7 $\mu$ m)



# 00 UTC on 4 November, 2004 at 500.0 mb

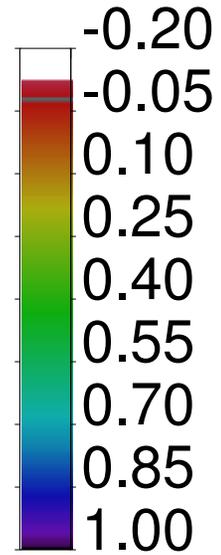


NMC, Grid: GG1X1

Seq: E01, Spec: SAVN170L42

60 hr fcst

## Total CF ( )



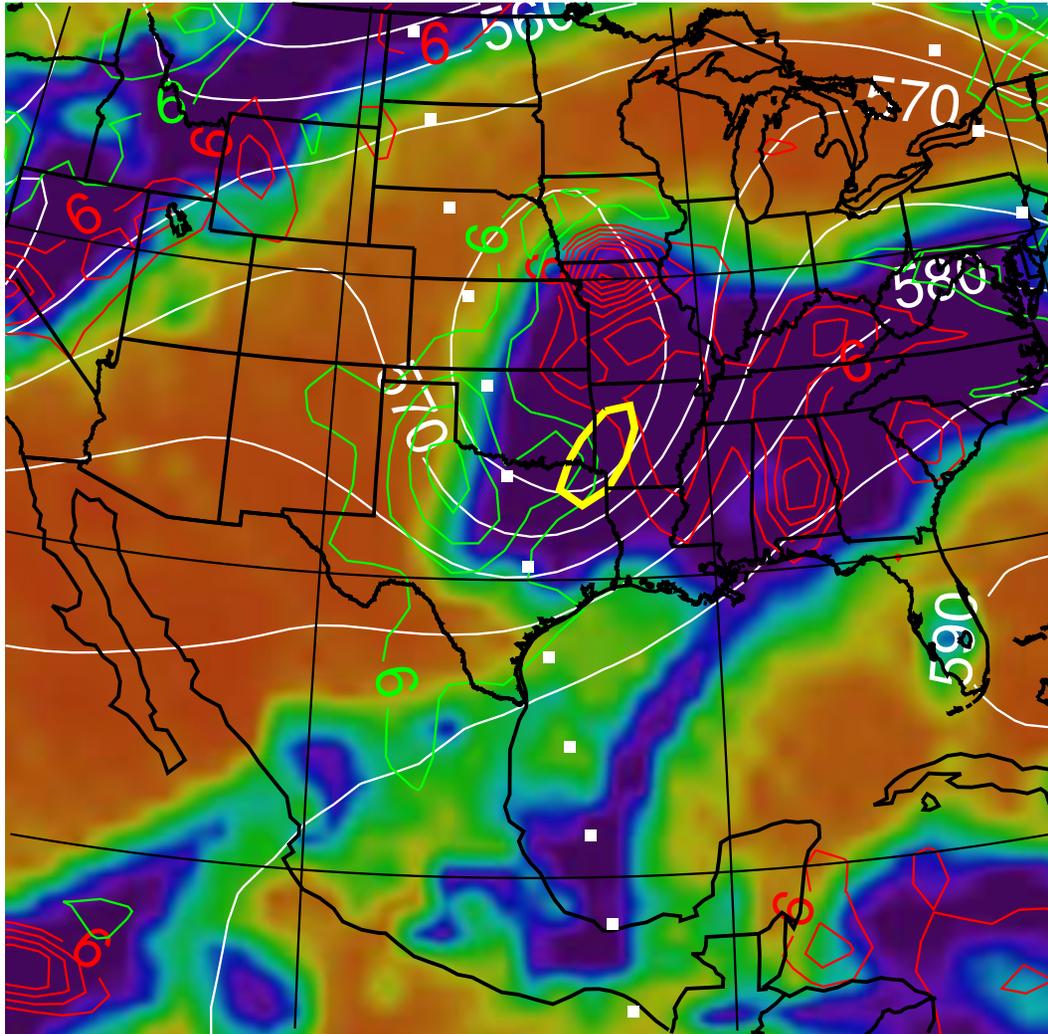
Z (dam)

Ascent (6 mb/hr)

Descent (6 mb/hr)

Trop (EPV=2.5)

# 00 UTC on 4 November, 2004 at 500.0 mb

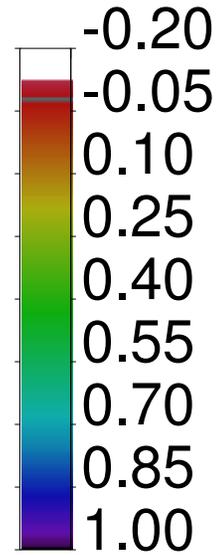


NMC, Grid: GG1X1

Seq: E01, Spec: SAVN170L42

48 hr fcst

## Total CF ( )



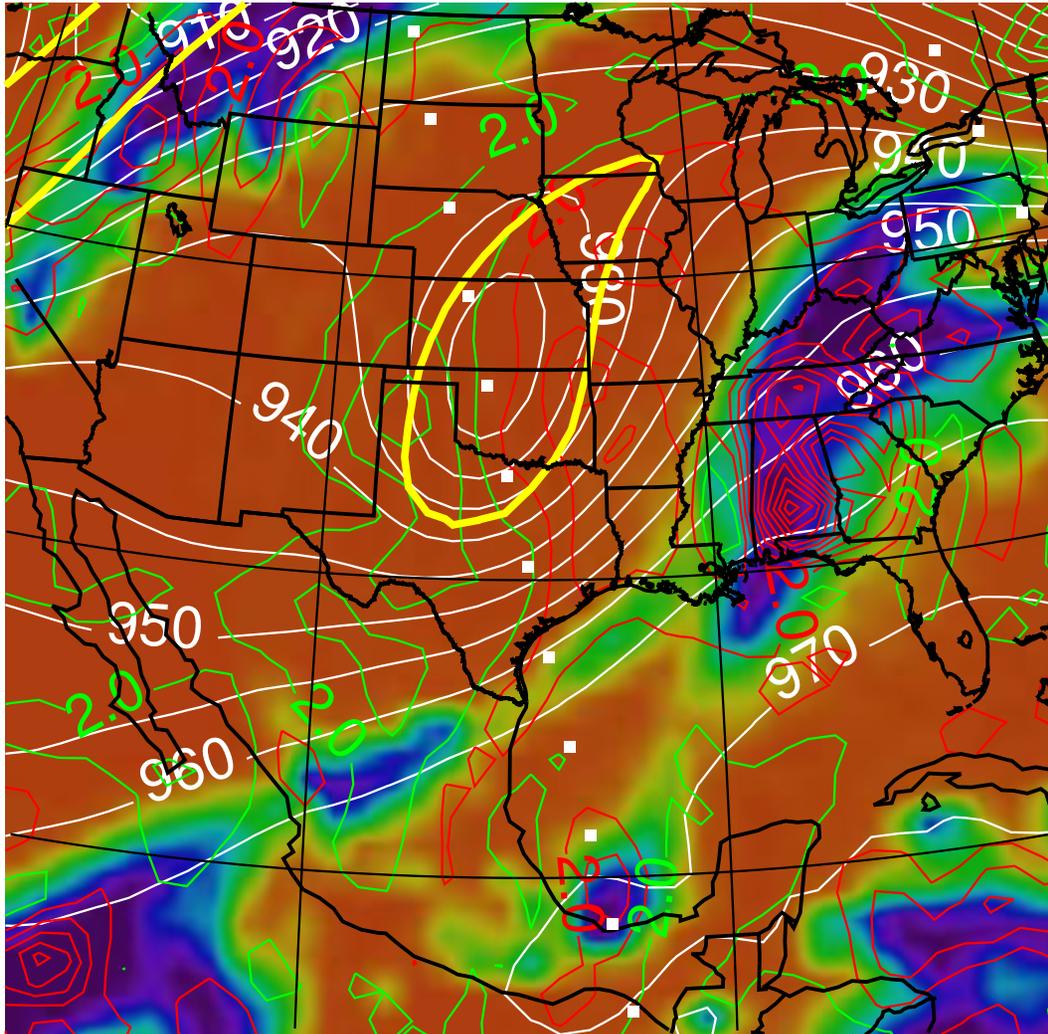
Z (dam)

Ascent (6 mb/hr)

Descent (6 mb/hr)

Trop (EPV=2.5)

# 18 UTC on 3 November, 2004 at 300.0 mb

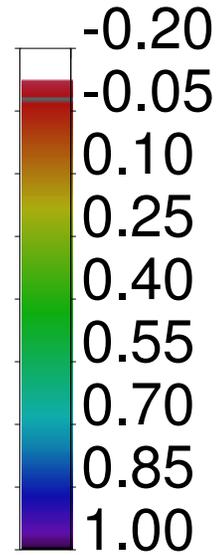


NMC, Grid: GG1X1

Seq: E01, Spec: SAVN170L42

42 hr fcst

## High CF ( )



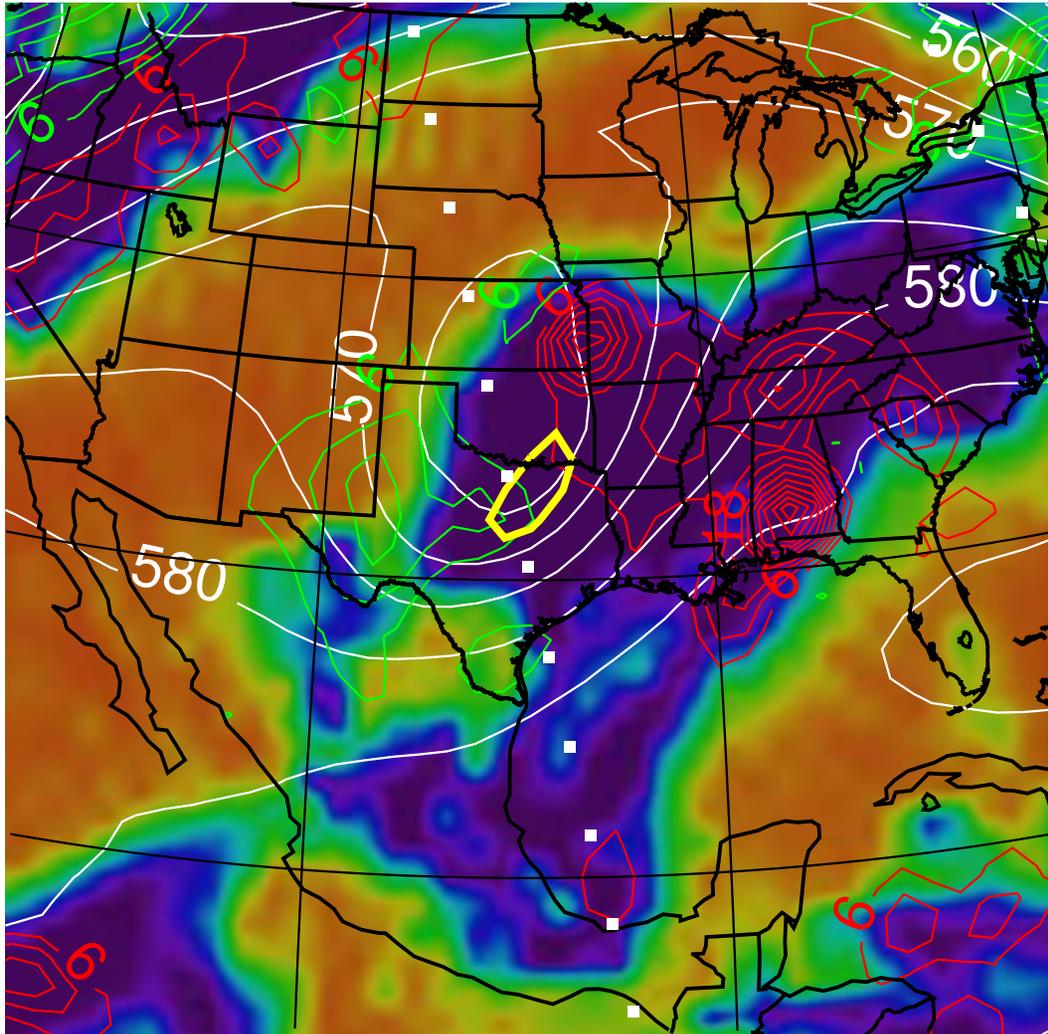
Z (dam)

Ascent (4 mb/hr)

Descent (4 mb/hr)

Trop (EPV=2.5)

# 18 UTC on 3 November, 2004 at 500.0 mb

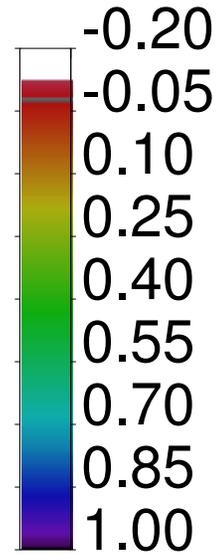


NMC, Grid: GG1X1

Seq: E01, Spec: SAVN170L42

42 hr fcst

## Total CF ( )



Z (dam)

Ascent (6 mb/hr)

Descent (6 mb/hr)

Trop (EPV=2.5)

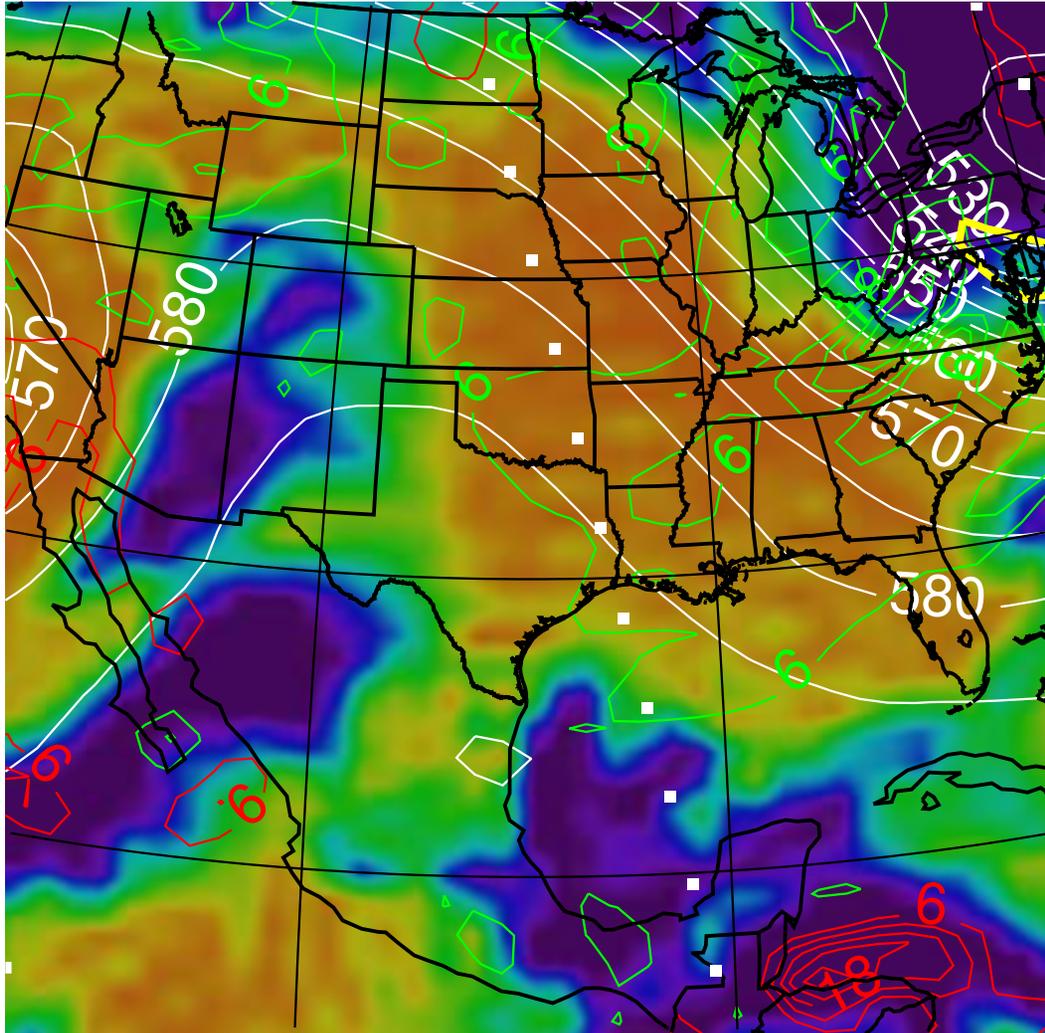
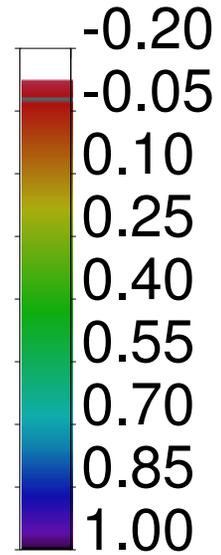
# 00 UTC on 6 November, 2004 at 500.0 mb

NMC, Grid: GG1X1

Seq: E01, Spec: SAVN170L42

96 hr fcst

## Total CF ( )



Z (dam)

Ascent (6 mb/hr)

Descent (6 mb/hr)

Trop (EPV=2.5)