#### Figure I



FIG. 1. Map of the Oklahoma Mesonet grid used for 1997. Delaunay triangulation was used to connect the stations to form the grid. Low aspect ratio triangles were removed. The triangles removed were primarily on the outer border with the exception of two near 35°N 98°W.

# Figure 2



FIG. 2. Front scores for the JJA 1997 period at the Blackwell Mesonet station (36.75°N, 97.25°W). Large positive front scores indicate frontal passages.

#### Blackwell Figure 2.1? 0.8 0.6 CDF Question: What more, **Blackwell Summer 1997** 0.4 10<sup>5</sup> if anything, should I use 0.2 to represent frequency 10 0∟ \_5 of FS threshold being 15 10 0 5 Frequency **Front Score** 10<sup>3</sup> exceeded? 10 **Options:** I.CDF 10 2. PDF 10<sup>0</sup>∟ −20 -10 10 3. Just mentioning in **Front Score 15–Year All Stations** 10<sup>6</sup> text that this is 10 generally 10 representative of the 10 Mesonet geographically Frequency and that monthly 10 differences will be 10 described in a later $10^{2}$ section. 10<sup>1</sup> 10<sup>0</sup> **–**30 -20 -10 0 10 20 30

Front Score

20

# Figure 2.2? Some sort of plot to show divergence is a suitable option to use instead of precip.



# Figure 3



FIG. 3. Seasonal average  $-\Delta T$  and  $\Delta p$  for 1997-2011 frontal passages.

Figure 4



FIG. 4.  $\Delta p$  versus  $-\Delta T$  at stations that are part of frontal passages across triangles in the Oklahoma Mesonet from the 1997-2011 period. The color bar represents the frequency of occurrence. The correlation is 0.28.

FIG. 5. Seasonal correlations between  $-\Delta T$  and  $\Delta p$  at stations during frontal passages across triangles.

Figure 6





FIG. 6. Average divergence values (in 10<sup>-5</sup>s<sup>-1</sup>) at the beginning, middle, and end of all frontal passages experienced by Mesonet triangles from 1997-2011 by season.

FIG. 7. Average divergence values (in  $10^{-5}s^{-1}$ ) at the beginning, middle, and end of frontal passages resulting in cold pools experienced by Mesonet triangles from 1997-2011 by season.

# Figure 8



Fig. 8. Average and standard deviation of the number of fronts and cold pools experienced by Mesonet triangles per month from 1997 to 2011.



Thursday, October 27, 16



Fig. 10. Seasonally averaged diurnal cycle (in UTC time) of the percentage of frontal passages resulting in cold pools.

### DYNAMO moisture budget



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