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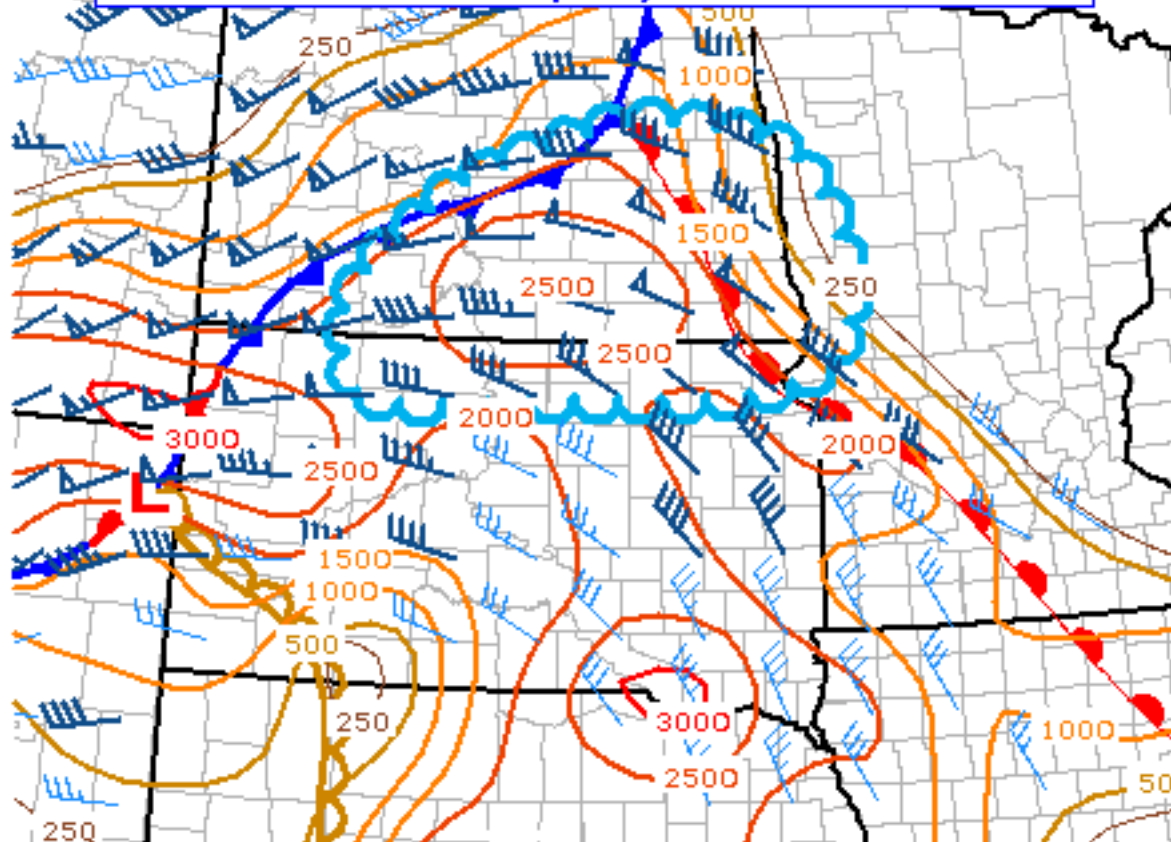
Mesoscale Discussion 647

< Previous MD

Next MD >

180605/2200 MLCAPE j/kg and Effective Bulk Shear kt

Thunderstorms expected to initiate between 01Z and 02Z. Supercells with large hail and damaging wind will be the initial primary threats.



SPC MCD #0647

Mesoscale Discussion 0647

NWS Storm Prediction Center Norman OK

0601 PM CDT Tue Jun 05 2018

Areas affected...south central through southeast North Dakota and north central through northeast South Dakota

Concerning...Severe potential...Watch likely

Valid 052301Z - 060130Z

Probability of Watch Issuance...80 percent

SUMMARY...Storms may develop across portions of central North Dakota by 01-02Z. Supercells with large hail and damaging wind will be the initial threats, but a brief tornado may also be possible. With time storms are expected to evolve into an MCS with damaging wind becoming the main threat. A WW will probably be needed this evening, most likely 01-02Z.

DISCUSSION...Early this evening a cold front extends from northeast

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through southwest ND. A warm front stretches from southwest MN into eastern ND where it intersects the cold front. Warm sector between these boundaries has become moderately unstable with 8 C/km 700-500 mb lapse rates situated above upper 50s F low-level dewpoints resulting in up to 2500 J/kg MLCAPE. Warm air at the base of the elevated mixed layer has resulted in a capping inversion, and this region has been under the influence of shortwave ridging much of the day. However, water vapor imagery indicates a shortwave trough near the MT/ND border. Increasing ascent associated with this feature and a strengthening low-level jet should result in the development of storms along the cold front this evening with consensus among CAMS suggesting between 01 and 02Z. RAP analysis indicates a 50 kt mid-level jet accompanying the shortwave trough, and this will contribute to sufficient effective bulk shear for supercells as the initial storm mode with damaging wind and large hail the main threats. Despite higher than optimal LCL heights, a brief tornado or two cannot be ruled out, mainly within a small window before storms grow upscale.

..Dial/Hart.. 06/05/2018

...Please see www.spc.noaa.gov for graphic product...

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