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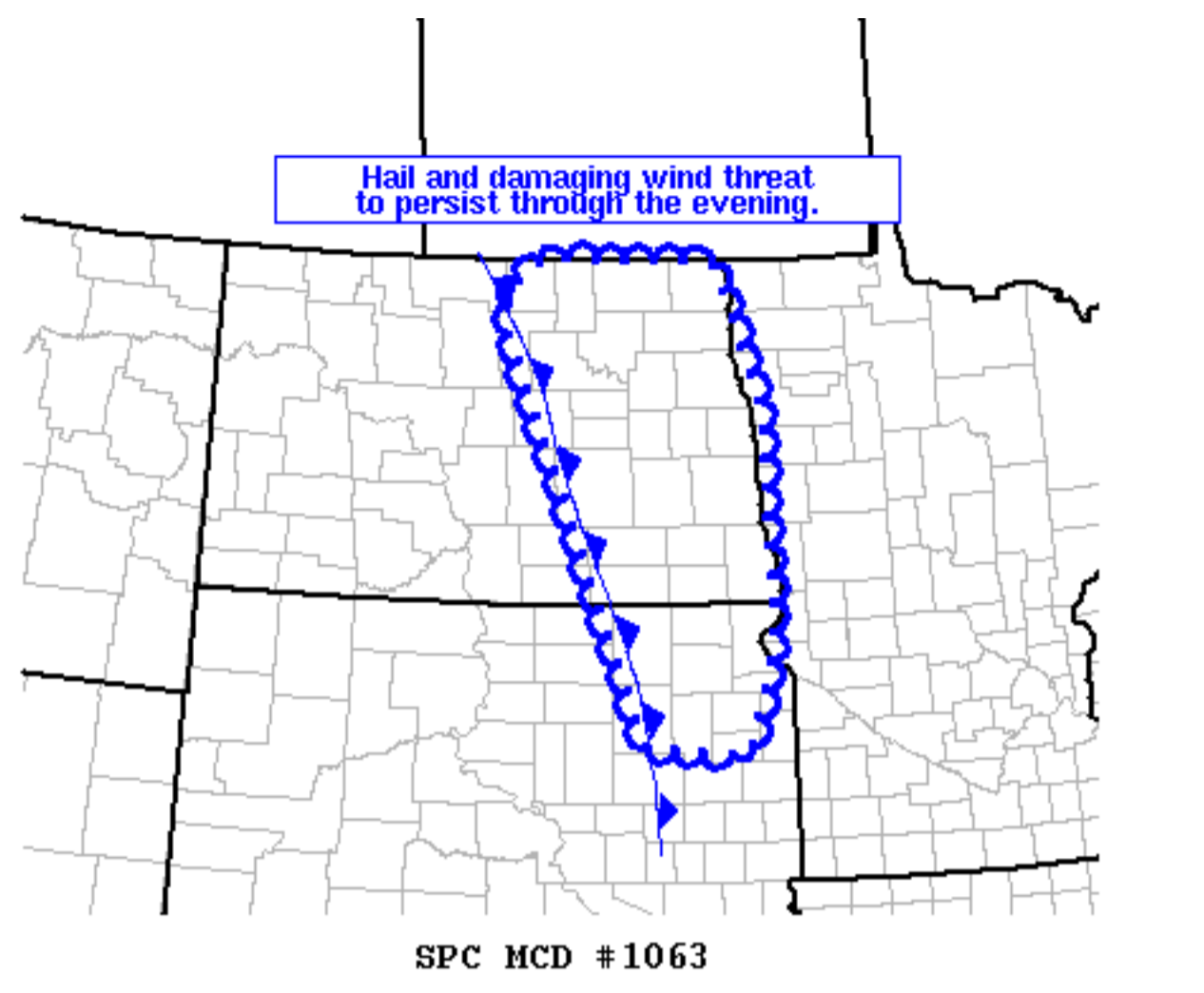
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Mesoscale Discussion 1063

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Mesoscale Discussion 1063

NWS Storm Prediction Center Norman OK
0838 PM CDT Tue Jun 30 2020

Areas affected...Eastern North Dakota and northeast South Dakota

Concerning...Severe Thunderstorm Watch 319...

Valid 010138Z - 010245Z

CORRECTED FOR GRAPHIC

The severe weather threat for Severe Thunderstorm Watch 319 continues.

SUMMARY...A large hail and damaging wind threat will persist through the evening across the eastern Dakotas.

DISCUSSION...Storms have formed along the cold front from southern North Dakota into northern South Dakota. Convection has not been that strong thus far, likely due to the weak effective shear and the warm air around 3 km. The 00Z ABR sounding is a good proximity sounding for the environment along this line. This RAOB shows extreme instability (~3800 J/kg J/kg) and effective shear around 10 knots. In addition, CAPE is very small (35 J/kg in the lowest 3km and likely responsible for the lack of explosive updraft development despite the extreme instability. Additionally, the storms which have formed in the confluence zone near Aberdeen, SD have also struggled thus far.

While there is still a chance for strong to severe storms, the window is shrinking as the boundary layer rapidly cools in the next 2 hours.

The best chance for severe storms will likely be in eastern North Dakota for the next several hours. Flow is somewhat stronger in this region based on the 00Z KBIS RAOB and the KMXV VWP. This is likely why storms have shown slightly better organization. In addition, the cold front is oriented more orthogonal to the low-level shear in north Dakota, and thus updrafts have been able to stay better rooted along the boundary.

..Bentley.. 07/01/2020

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

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