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Visiting CSU ATS from NCAR

The 8 May 2009 “Super Derecho”: A Land-Hurricane?

Hosted by Sue van den Heever

Thursday, December 3, 2009

ATS room 101; Discussion will begin at 3:30pm

Refreshments will be served at 3:00pm in the coffee lounge

During the morning of 8 May, 2009, a large bow echo system developed over Kansas and proceeded eastward, producing an extensive swath of severe wind damage from eastern Kansas through southern Illinois. During its most intense phase, the bow echo occluded, producing an eye-like structure similar in many respects to tropical cyclones. Indeed, much of the wind damage with this system was associated with an intense (10 mb) mesolow located at the tip of the occlusion, well behind the leading gust front. This system was forecast in real-time 24 h in advance with the WRFARW model, using a 3 km horizontal grid interval, accurately reproducing the observed occluded eye-like structure and accompanying intense mesolow. This surprisingly accurate forecast allows for an unprecedented analysis of the structure and evolution of such a unique convective system, as well as offering, through sensitivity testing, a sense of the predictability of such events. Preliminary results of this ongoing analysis will be presented, along with comparisons to idealized model representations of such bow echo systems and observations of other significant derechos.
