



Bridging research and operations: SPC interactions and field experiments

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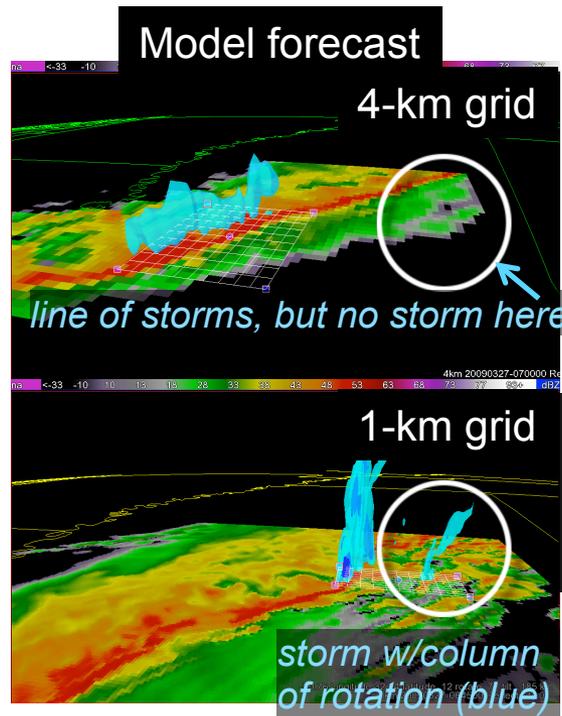
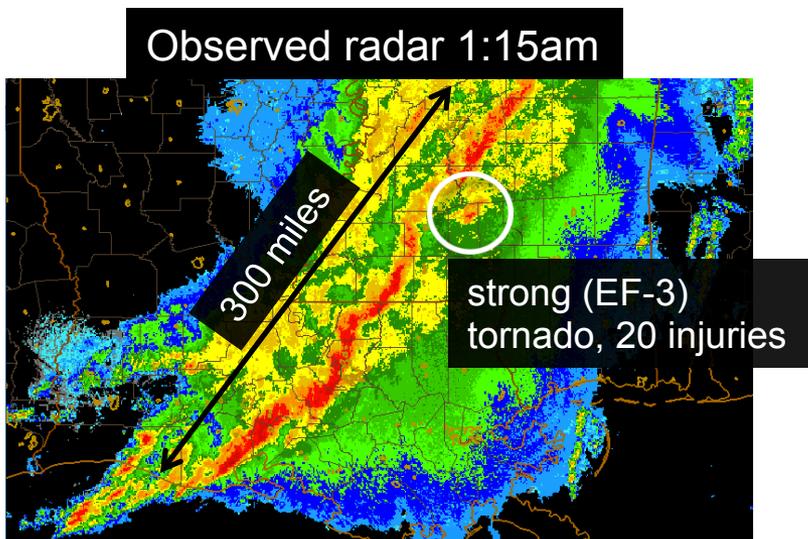


non-HWT collaborations with forecasters

Many behind-the-scenes collaborations outside the HWT within NSSL



- Example: Forecast model behavior during cold-season nocturnal tornadoes
- Hard to distinguish from null events...difficult problem for SPC



Ariel Cohen
SPC forecaster/formerly
NWS Jackson, MS

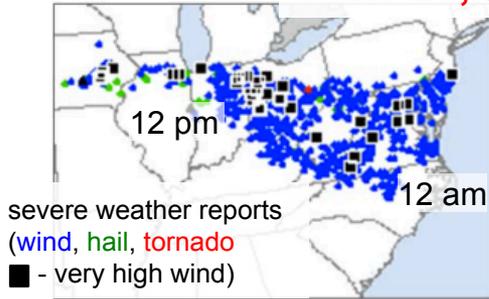
high-resolution
needed to capture
tornadic storm at
night



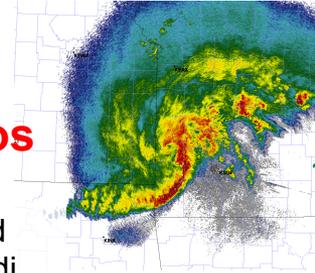
non-HWT collaborations with forecasters

Studies of storm systems that produce non-tornadic high winds and **Derechos**

June 29, 2012 Derecho



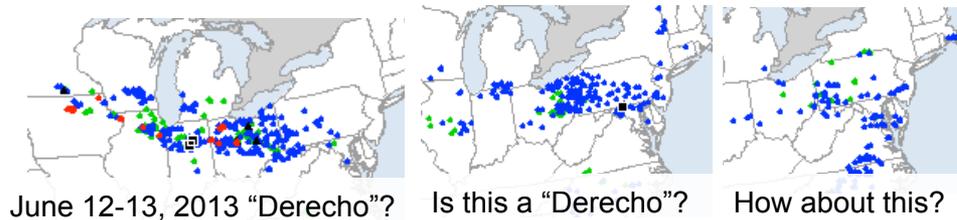
Media confusion & outdated definition led to Steve Corfidi and NSSL to propose new derecho definition



Steve Corfidi, SPC lead forecaster



What Is a Derecho? **TIME** Explains.



Derecho definition last refined 30 years ago, but our reporting and radar networks are much improved....

too many storm systems could be called derechos

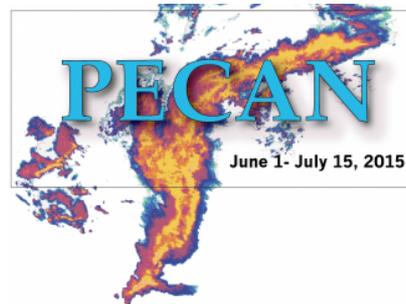
limit to very long-lived, large storm systems w/ internal jet streams, bowing leading edge

Aided by Steve's 30+ years of operational forecasting and many years of research on derechos,

incl. three NSSL-led publications on derechos and storm systems w/SPC collaboration since 2009

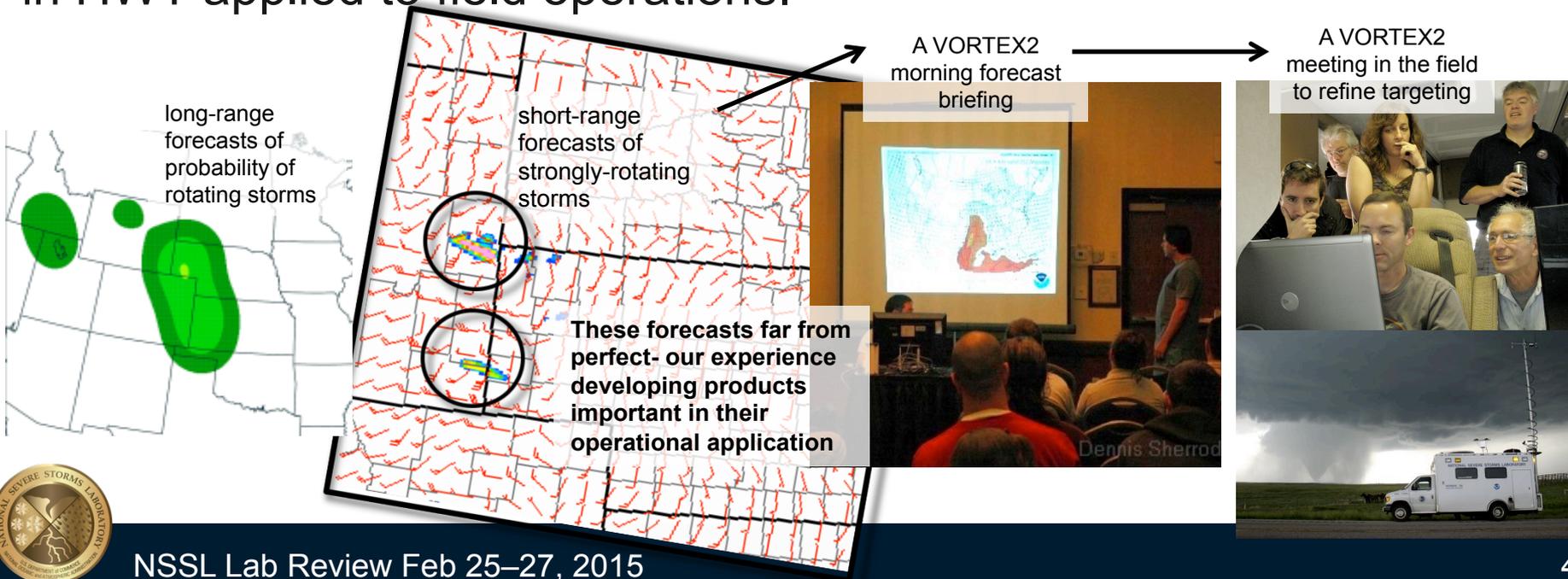


Major Field Programs since 2009



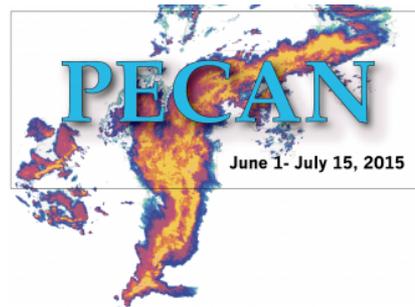
Two expert SPC forecasters (recently retired) will lead forecast operations in the field, one an HWT facilitator

Field Programs are vehicles for O2R- experimental methods tested in HWT applied to field operations.





Field Programs: Vehicles for direct collaboration with universities other than



mobile radars (NOXP, SMART-Rs)

PENNSSTATE



UAH
The University of Alabama in Huntsville



NC STATE UNIVERSITY



balloon-borne instruments from mobile facilities



mobile profiling systems



mobile mesonets



lightning research



unmanned aerial systems



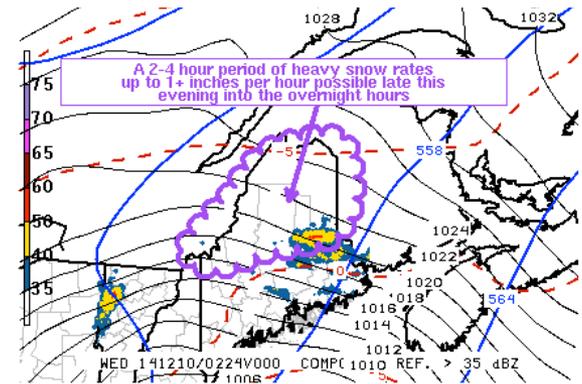
Reach of O2R activities in field campaigns is broad across the community



Future: New NSSL/SPC initiative

NSSL scientists work operational shifts, issue real products

- Direct conduit for R2O ↔ O2R activities
- 2 - 4 shifts/month (day or evening shifts)
- *Enhanced Thunderstorm Outlooks and Mesoscale Discussions*



Collocation of NSSL and SPC essential, but...

Years of successful collaboration w/ SPC, NSSL, HWT were needed...led to culture change and trust to make this happen





Summary

Successes

- Collaboration w/operations has facilitated applied science & research (O2R):
 - cold-season tornadoes in the southeast U.S.
 - non-tornadic high wind events & derechos
 - application of experimental forecasting technique & guidance to field program operations
 - NSSL scientists now working operational shifts at SPC



Remaining challenges

- Maintain these bridges (NOAA to continue to foster collaborative research between forecasters and researchers when topics of mutual interest arise)
- O2R (incl. forecaster involvement in research) important in transition process

