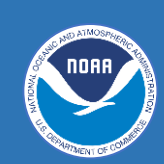


# RaXPoI Data Collection on PERiLS

Morgan Schneider, David Bodine, Boonleng Cheong, and David Schwartzman





# RaXPol

- Rapid-scanning X-band Polarimetric (RaXPol) mobile radar at OU ARRC
- Participated in PERiLS during March and April 2023 (IOPs 2–5)
- Rapid-scan ( $180^\circ/\text{s}$ ), shallow 30-s volumes
- Preliminary quality control:
  - Automated clutter filtering
  - Manual azimuth correction
  - Z/ZDR calibration
- Data are in CFradial and will be uploaded to EOL in the future

RaXPol operating parameters	
Transmit frequency	9.74 GHz
Operating wavelength	3.08 cm
Peak power	20 kW
Antenna	2.4-m parabolic dish
-3 dB beamwidth	$1.0^\circ$
Polarization	Dual-linear, simultaneous H/V
Maximum rotation speed	$180^\circ/\text{s}$
Pulse width	0.1 – 40 $\mu\text{s}$
Maximum range (PERiLS)	37.5 km
Nyquist velocity (PERiLS)	30.8 m/s



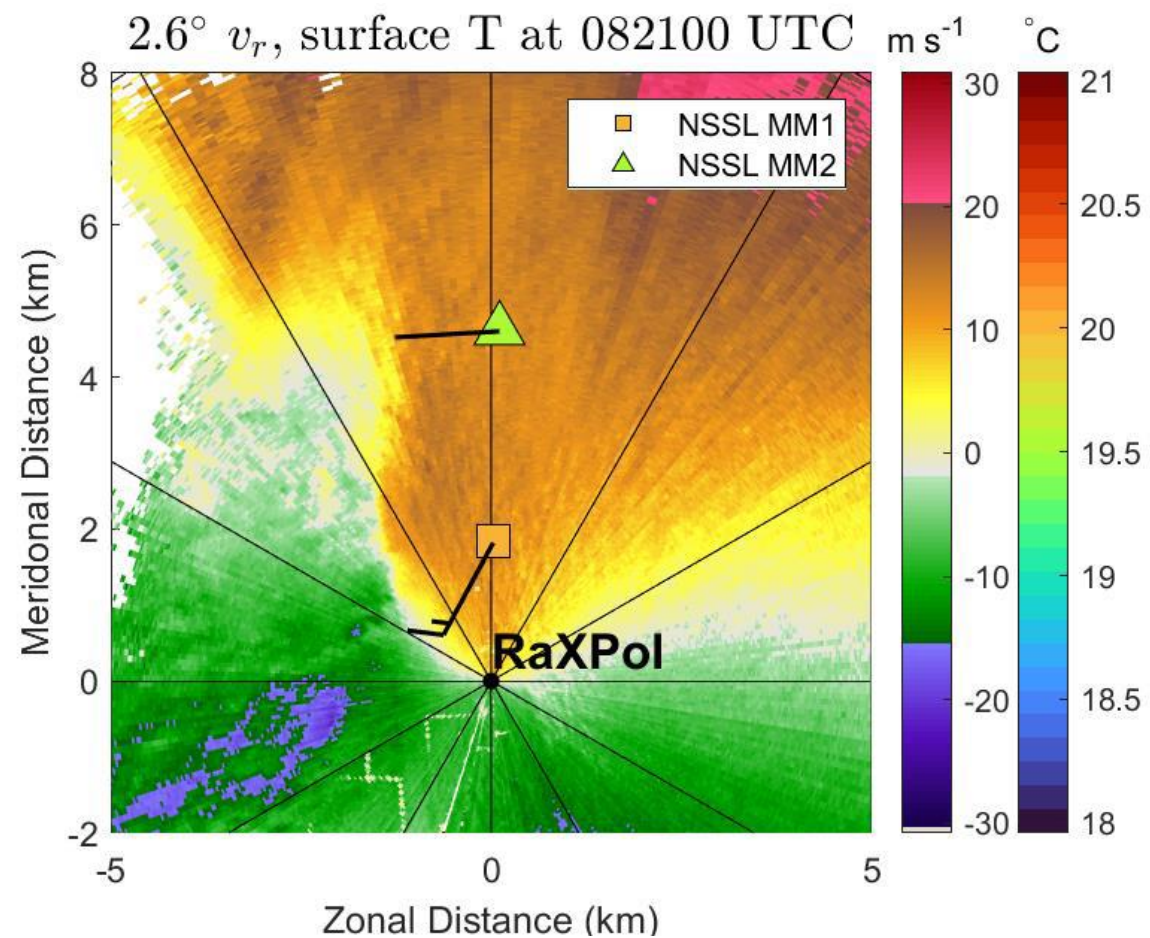
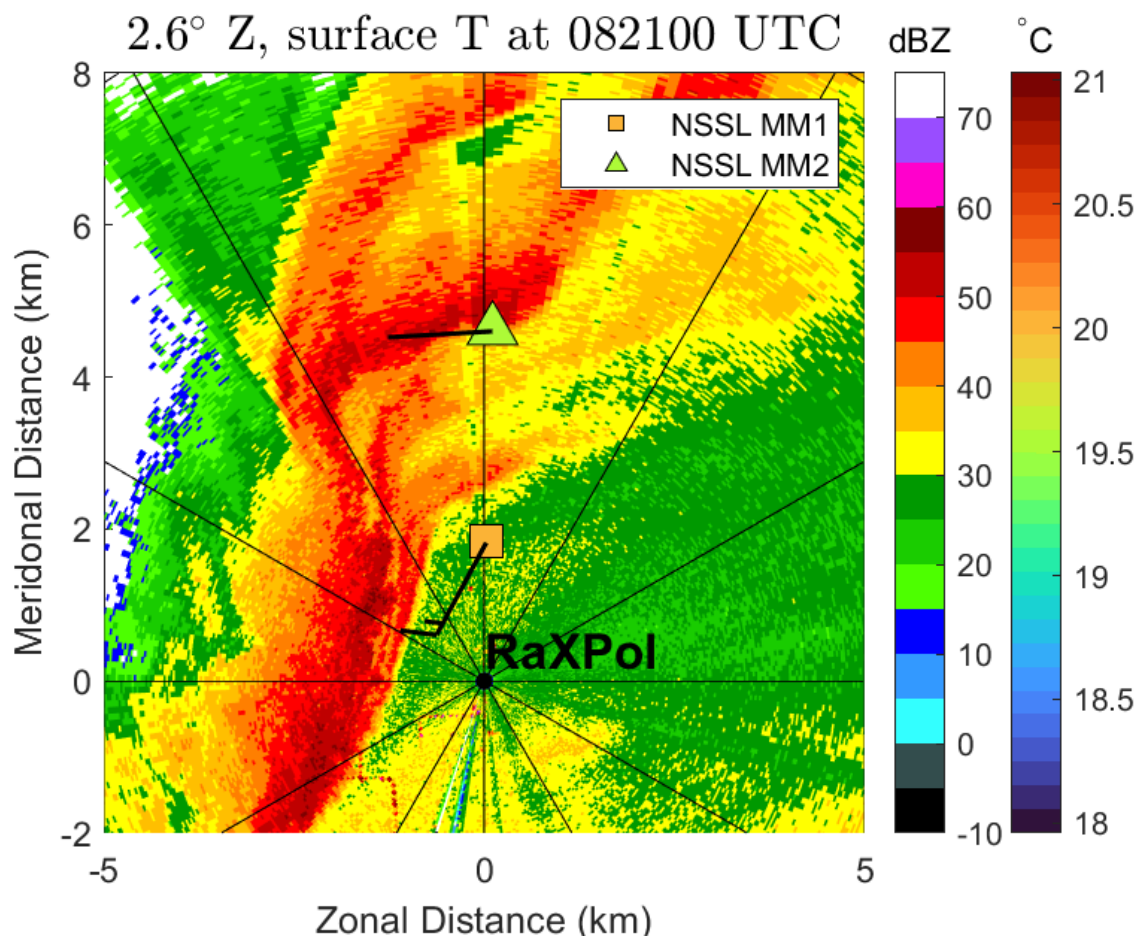
# IOP2

- Crew: David Bodine (lead), Brandon Cohen, Boonleng Cheong, Min-Duan Tzeng
- Observing period: 3 March 2023, 0745–0908 UTC
- VCP: 13 tilts, 1.0–19.0° every 1.5°, scanning speed 180°/s
- Data issues: Data gap between 0750–0805 UTC due to transmitter malfunction
- Noteworthy: Close-range observations of a nontornadic mesovortex, simultaneous mobile mesonet surface observations





# IOP2



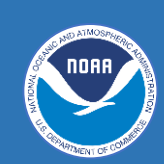


# IOPs 3 & 4

- ☹️
- IOP3 crew: Morgan Schneider (lead), David Bodine, Laura Shedd, Min-Duan Tzeng
- IOP4 crew: Morgan Schneider (lead), Patrick Skinner, Min-Duan Tzeng, Nathan Kuhr



*Radar surgery in Florence, AL.*



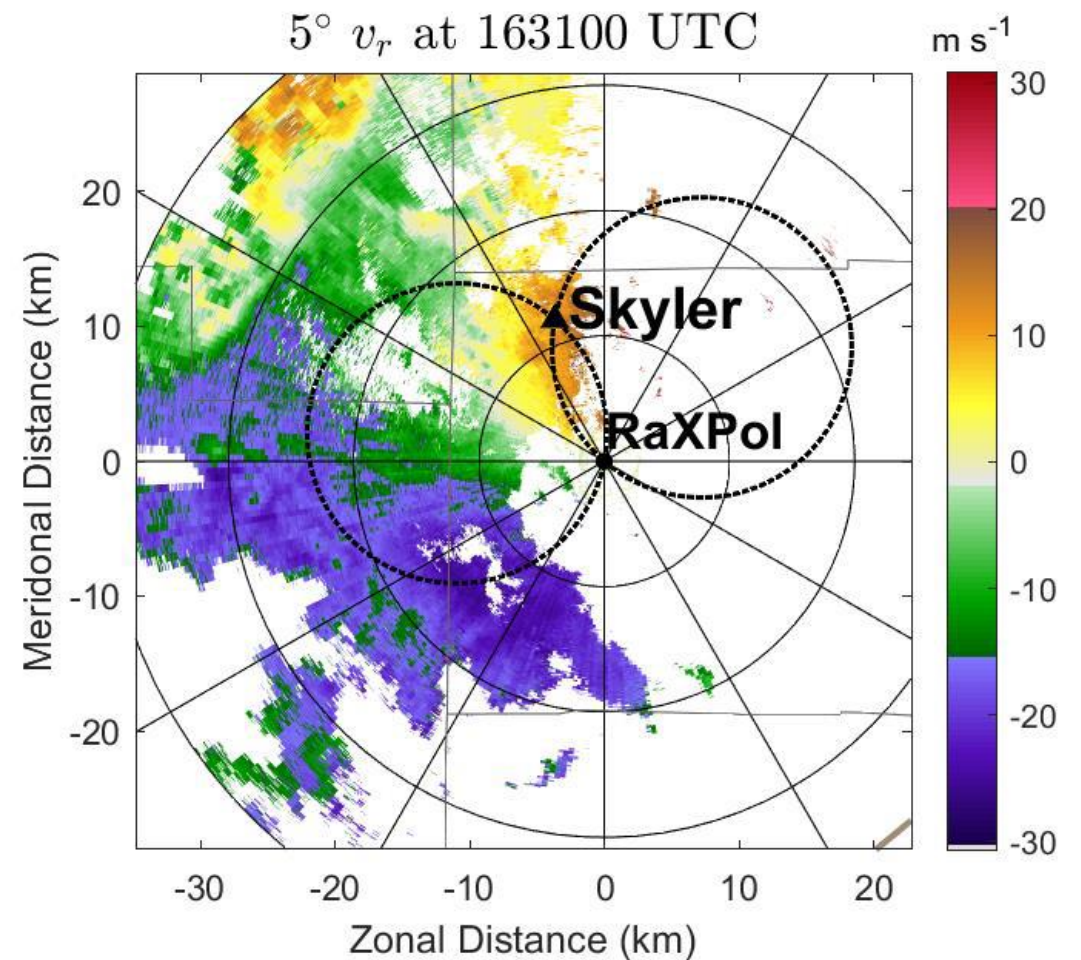
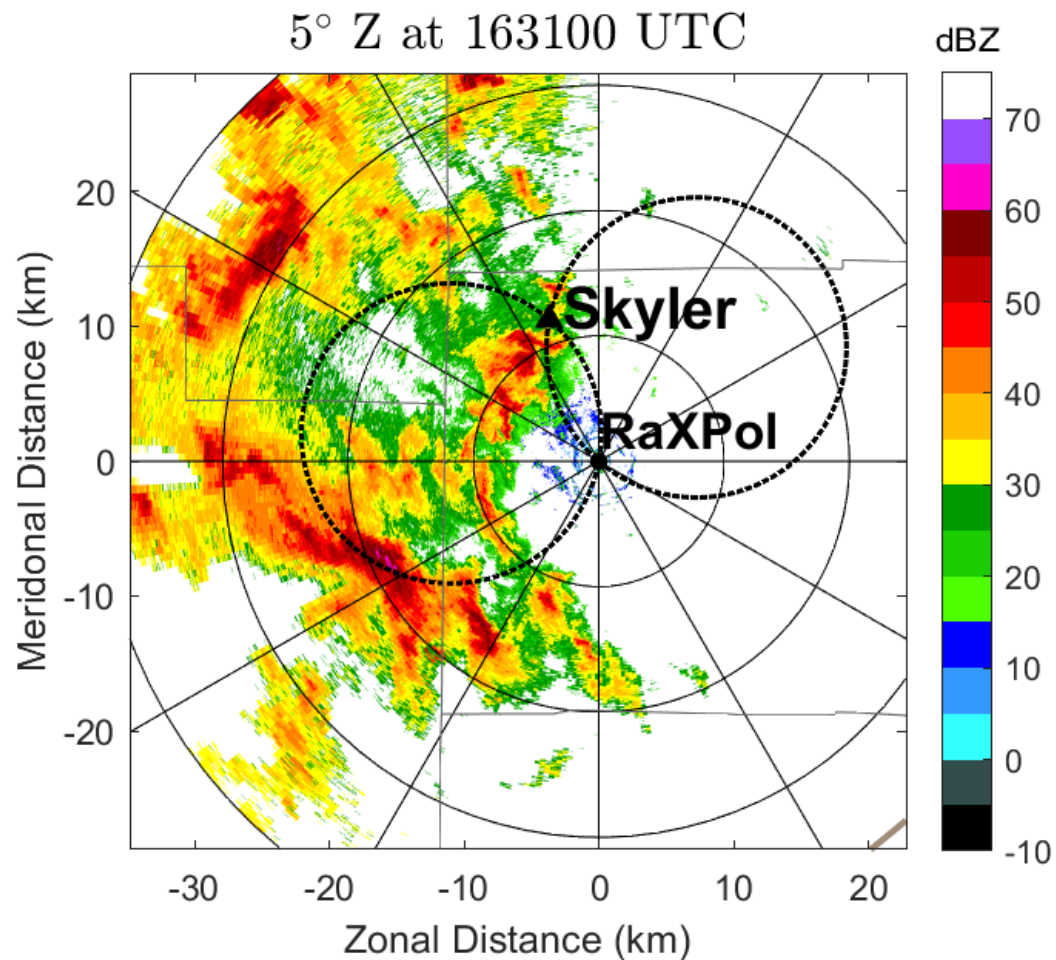
# IOP5

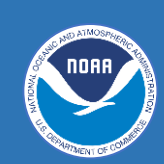
- Crew: Morgan Schneider (lead), Brandon Cohen, Boonleng Cheong, Min-Duan Tzeng, Dale Sexton
- Observing period: 5 April 2023, 1453–1746 UTC
- VCP: 15 tilts, 1.0–29.0° every 2.0°, scanning speed 180°/s
- Data issues: No major issues.
- Noteworthy: Coordinated rapid dual-Doppler observations with SBU SKYLER at a ~10-km baseline





# IOP5





# Questions?

Email me at [morgan.schneider@noaa.gov](mailto:morgan.schneider@noaa.gov).

*Acknowledgments:* Data collection was supported by NOAA award NA21OAR4320204 and VORTEX USA. Thanks to the University of Oklahoma Advanced Radar Research Center for facilitating the use of RaXPoI in support of PERiLS.