The updated FARM
Flexible Array of Radars and Mesonets
(DOWNET and COWNET CIFS)

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Flexible Array Radars Mesonets

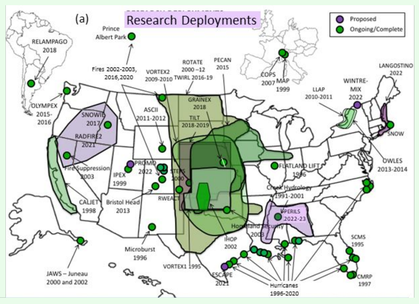
Awards: 2020462, 2113207, 2431370, 2431455, 2508611, 2410917, 2524109

3 NEW RADARS

Replaced those old DOWs

DOW6 → DOW B **DOW7 → DOW A**

- New Transmitters
- New Trucks
- New Processing



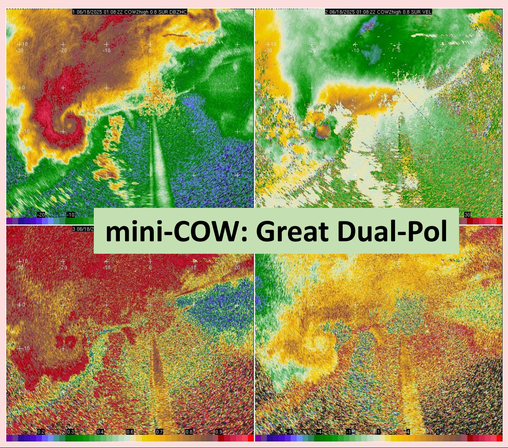
	DOW A,B	COW	CROW	CROW	CROW
			DOW 8	RSDOW	Mini-COW
Tx kW peak	2x 250	2x 1000	100	40	1000
PRF Hz	500-6000 w/stagger				500-6000 w/stagger
Pulse Length μs	0.167-1.0			0.1-1.0	0.15-1.0
Scan rate °/s	50	24	50	7-s volumes	50
Products	LDR, ZDR, Rho-HV, V, Z, SW, NCP, IQ		Z,V,SW,NCP, IQ		ZDR, Rho-HV, V, Z, SW, NCP, IQ
Beamwidth °	0.93	1.05	0.93	0.8 x 0.9	1.5
Gate Length m	12.5-600			11-600	12.5-600
Met + Comm Mast	18 m	future mast	14 m		14 m

Added the best mobile C-band

New mini-COW

Serving research need for higher power, reliable, modern, mobile C-band

- New Transmitter (1 MegaWatt)
- New Processing
- New Antenna (50°/sec, 1.5 deg)
- New Receiver



COW

Adaptable, Rapidly Depoyable, Rapidly Targetable Anchor Radar

Most Powerful Tx 2x 1 MW (best sensitivity)

Fastest Scanning 34 °/sec

Narrow Beam 1.05 °

Dual-Pol

Dual-Frequency

1.5 hour set up (we keep getting faster)

ICECHIP

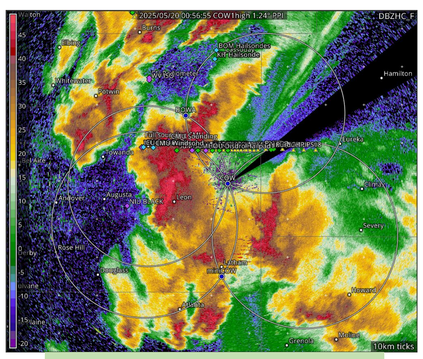
COW Re-Deployed for Every IOP

GURU

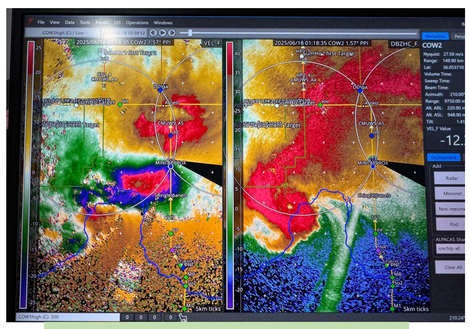
Tactical Awareness System

Real-Time Multi-Radar Soundings, Pods, Mobile Mesonets

Looping, multi-panel…..modern



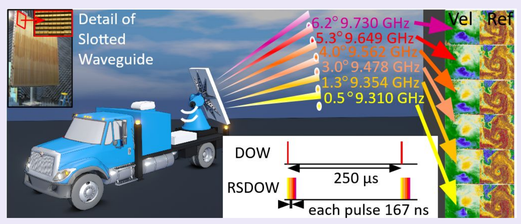
GURU Real-Time Display COW, Mini-COW DOW A, DOW B



GURU: Mini-COW: Hail-Producing Supercells also make Tornadoes

Rapid-Scan DOW

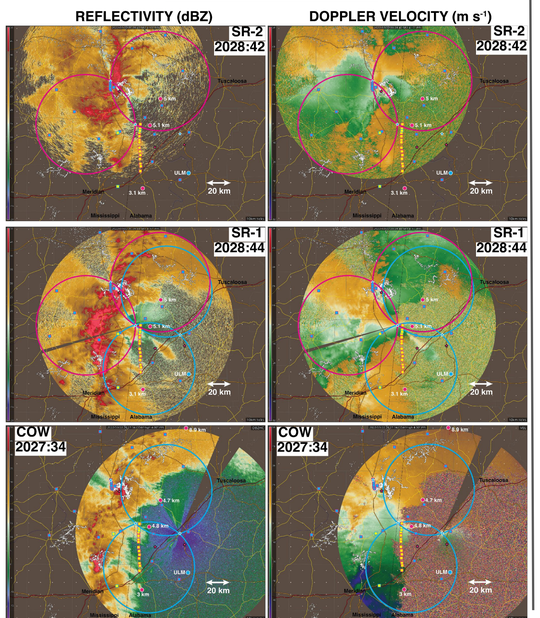
Single-Pol
40 kW Tx
0.8 x 0.9 ° beam
50 °/sec
7-sec volumes



FARM: One-Stop Shop for Radars, Mesonets, PodNet, PoleNet, Disdrometers, Soundings

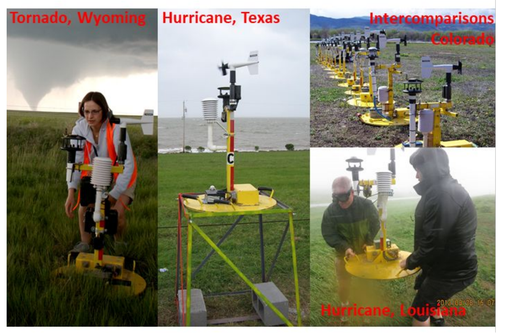
LIDAR-based Radar-Siting Tool

GURU: PERiLS



Mobile MesoNet

PodNet, 1-2 m AGL, 16 or more



PoleNet 3-5 m AGL

Soundings
6 Graw
1 Windsonde

	PODNET	POLENET	Mobile Mesonet	Upper Air Soundings	Disdrometers
Number	Up to 20	3-12 (can share instrumentation package with PodNet)	3	6 Graw 1 Windsond/ Swarmsonde	4
Measurements	T/RH (Campbell Scientific EE181-L/Rotronic HC2S3 + Shield RAD10E), P (Vaisala PTB1100), GPS (Garmin 16X-HVS), Wind x 2 (RM Young Jr. 04101 and Gill WindSonic 75 Ultrasonic)	Wind (RM Young 05103 and FT742 Sonic Anemometers), can be customized with any PodNet instrumentation	T/RH (Campbell Scientific EE181-L + Shield) P (Vaisala PTB1100), GPS (Garmin 16X-HVS), Wind (RM Young 05103) Can host others.	T, RH, Wind, P	Drop Size Distribution
Sampling Rate	Up to 10 Hz	Up to 10 Hz	Up to 10 Hz	1 s	10 s
Real-time Data	yes	yes	yes	yes	no
Platform	Hardened steel "T" stand	Attaches to infrastructure such as power and light poles, railings, at user specified heights	Pick-up truck. Can deploy PodNet and PoleNet (also sounding systems; not proposed)	Graw Windsonic	OTT Parsivel
Height	Configurable (currently 1, 1.5, 2 m)	Configurable, on existing infrastructure. Typically 3-10 m	3.5 m	1-20000 m	1 m
Camera/Video Attachment	yes	yes	yes	no	yes
Comm Compatibility	Cellular Internet	Cellular Internet	Cellular Internet		
Data	local	local or wireless	local or internet	local	local