

# Radar LOG

Radar Unit: SMARTR-1

Site: Geiger, AL

Mission Type: PERiLS IOP 1

Operator(s): Carrie/Prosser

UTC Date: 22 March 2022

Lat (dec. degs)  
36.88769 N

Long (dec. degs)  
88.34411W

Alt:  
61.96 m

Orientation (deg): 115

Clutter scan  
performed? Yes

## Radar Ops Time (UTC)

Note beginning (B) and end (E) times of ops; list periods of down (D) time along with reason for failure, and other problems.

Started Radar: 1605 UTC

IOP-1 Ops initiated: 1850 UTC.

Ops ended at 2115 UTC, radar un-deployed due to approaching vortex.

## Scan Strategy Notes

List scan type and time period used (chronological order); note nature and time scan mods were made (if any)

- VSE clutter scan from 1605 to 1615 UTC.
- FILT clutter scan from 1620 to 1720 UTC.
- Various strategies employed while developing scanning schedule between 1730 and 1821 UTC.

Ops initiated: 1850 UTC  
Switched to R60\_shallow/deep sets at 1850 -1938 UTC.  
Switched to R40\_shallow/deep sets at 1940 - 2052 UTC.  
Switched to R20\_shallow/deep sets at 2054 - 2115 UTC

Final volume in IOP: 2115 UTC R20\_deep

## Meteorological Notes

Describe general storm structure and evolution; note position and time of significant features and events; document fine lines (gust fronts, bores, other), peak  $Z_e$ , max echo tops, and height of first echo. Record time of significant sfc weather (peak wind gust, etc.)

A vigorous upper level system associated with a neutrally-tilted trough ejected through the Central and Southern Plains during the afternoon of March 22nd. Attendant phased jet streak, upper level diffluence, and upper level divergence impinged upon the Black Belt region in MS/AL. Coupled with the cold front draped over the MS river flood plain, initiation of numerous severe storms occurred in the region.

Intense wind shear and modest CAPE yielded a mixed mode of intense embedded line segments and supercells in the PERiLS operational domain during the afternoon and early evening hours of the IOP.

SR1 captured the presence of a supercell located ahead of the linear convective complex, the absorption of the supercell into the linear complex, and the mature stage of the subsequent convection. A considerable number of circulations was observed along the leading edge of the linear complex, one of which forced the SR1 crew to abandon the vehicle.

## Radar Images

Insert images that illustrate the general character of the event

