RAXPOL DEPLOYMENT SUMMARY

DATE: 8 APRIL 2015
CREW: HOWIE, KYLE, ZACH
LOCATION: NORTHWEST OKLAHOMA – SEILING, WEATHERFORD
TOTAL NUMBER OF DEPLOYMENTS: 2

SUMMARY: RaXPol left Norman just before 2000 UTC and headed west on I-40. The combination of cirrus and cloud cover owing to early afternoon convection across central Oklahoma prompted the team to head northwest to where greater insolation would provide the necessary surface heating to break a relatively stout cap. RaXPol headed north from I-40 towards Watonga, and then northwest towards Seiling, OK. At approximately 2100 UTC, convection began to fire in the dry air west of the dryline and propagate eastward towards our location. Additionally, convection had commenced due north of us near the Kansas/Oklahoma border. At 2200 UTC, we were forced to decide to stay put on a maturing cell approaching Seiling from the southwest, or move quickly northward into Kansas. With the exception of the dryline/front intersection being a slightly more favorable location for storm development, it was determined that there was no major reason to abandon the southernmost cell for the Kansas storms, especially given our proximity to the cell. RaXPol then headed south on U.S. 183 toward Taloga, OK, and then west about 15 km to our first deployment location. Upon arrival, the storm had been tornado warned and a low wall cloud (possibly a funnel cloud) was evident visually from our location. Approximately 40 minutes of data were collected at this location, details of which are listed below. The storm quickly became less organized, and proceeded to completely evaporate by ~0100 UTC. RaXPol then headed east on U.S. 60 to OK-51A back to Watonga, OK to "return to Norman".

While fueling and grabbing dinner in Watonga, a second round of convection which had formed on the retreating dryline was intensifying and moving northeastward towards our location. One cell in particular began to develop supercell characteristics in reflectivity and was tornado warned as it began to develop strong cyclonic rotation. Despite the timing of the event (after dark), our short distance to the storm combined with increasing velocity couplet intensity prompted us to head west towards Thomas, OK. Unfortunately, as was predicted by the navigator and radar operator, an intense surge of the rear flank gust front overtook the mesocyclonic circulation and the cell began to weaken in rotational intensity as we approached from the east. Despite the decrease in rotation, values near 75 dBZ were still observed in WSR-88D data. Crew continued to pursue this cell and deployed for data collection at approximately 0246 UTC. This deployment lasted 15 minutes (details also listed below). Following data collection, RaXPol headed south on OK-54 to I-40 and returned to Norman.

Of worthy note, several tornadoes were reported on this day associated with the northern storm complex, including several brief, weak tornadoes and one "large cone" which lasted "~5 minutes". Additionally, a brief touchdown was reported in Custer County at 0202 UTC within the tornado warned storm that RaXPol collected data on in the second deployment.

DEPLOYMENT 1:
LAT: 36.04369º   LON: -99.10042 º
15 km west of Taloga, OK

Scanning strategy 1 -- Began 2310 UTC
0º -20º /1º increments, 50 km range, 75m range resolution, 30m gate spacing

Scanning strategy 2 – Began 2316 UTC

0º -60º/2º increments, 30 km range, 30m range resolution, 15m gate spacing

Scanning strategy 3 – Began 2338 UTC
0º -20º/1º increments, 30 km range, 30m range resolution, 15m gate spacing

End of Deployment: 2348 UTC

DEPLOYMENT 2:
LAT: 35.72535º   LON: -98.72595 º
0.5 km South of Thomas, OK

Scanning strategy 1 -- Began 0246 UTC
0º -20º /1º increments, 30 km range, 30m range resolution, 15m gate spacing

Scanning strategy 2 -- Began 0259 UTC
0º -20º /1º increments, 30 km range, 75m range resolution, 30m gate spacing

End of Deployment: 0301 UTC

NOTES:
-Engine temperature approached dangerous values twice during operation, both occurring when truck was directed into the wind. **Look into this issue.**