**Using MRMS Rotational Tracks for Northeastern US Tornado Warning Guidance**

*Brian J. Frugis*

*NOAA/NWS Albany, NY*

Although infrequent compared to central and southern parts of the country, tornadoes do occur within severe thunderstorms across the Northeastern United States. Since 2017, 31 tornadic events have occurred within the National Weather Service (NWS) Albany New York County Warning Area (CWA). Forecasters at the Albany Weather Forecast Office (WFO) have traditionally used the V-R Shear relationship as a part of the warning process, which was locally updated in 2012 to account for the upgraded radar data to 8 bit high resolution. Assessing the mid-level rotation through this method can be time consuming, as the warning meteorologist will need look at the either a vertical cross-section or multiple plan view images at different radar elevation slices to assess the strength of the mid-level rotation.

As a result, more tools and strategies are needed to help to quickly evaluate storm-scale rotation. Using MRMS rotational tracks can be a tool during the tornado warning process. The Radar Application Course (RAC) teaches that both low and mid-level rotation tracks from the MRMS can be useful for a warning meteorologist to examine, as they show the maximum azimuthal shear within different layers. With data arriving from more than one radar site, these rotation tracks have the benefit of helping to eliminate some of the issues with beam blockage and beam widening that occur with using just a single radar site.

Considering this, MRMS rotation tracks were examined for the 31 tornadoes that occurred in the Albany CWA since 2017 and for 24 events that tornado warnings were issued but no tornadoes were reported. The highest values around and just before the tornado event (or warning issuance) were recorded. As seen in the results of the V-R shear study, values of low level and mid-level rotational shear are similar for both the tornadic and non-tornadic events. With a limited sample size and all tornadic events being on the weaker side (all EF0s and EF1s), it is possible that a stronger signal may be seen in time with a larger and more robust database.