

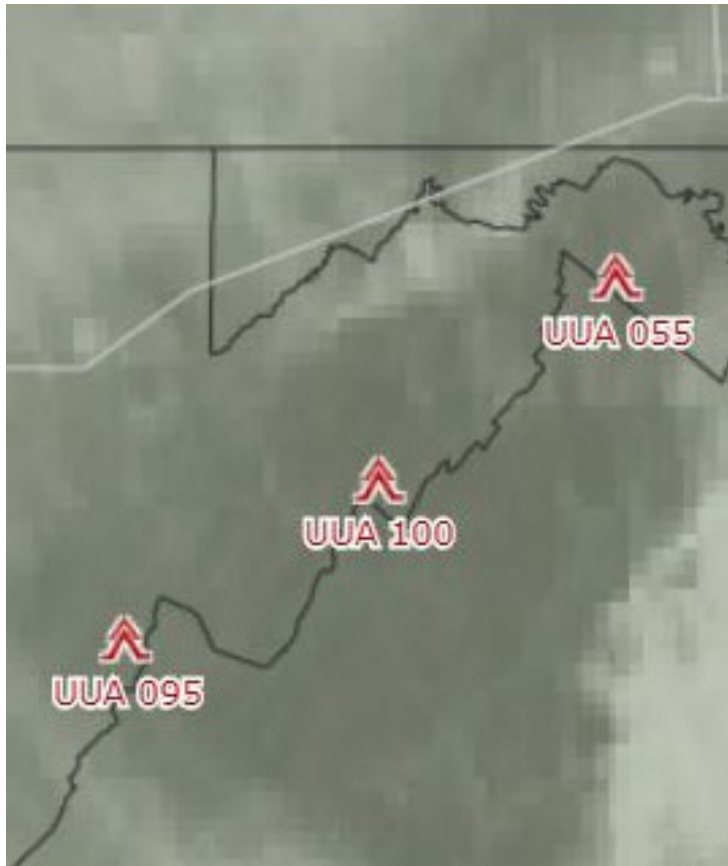
Mini case study: Cold front-related low-level severe turbulence on 10 Mar 2019

During the early eve of 10 Mar 2019, a cold front moving E across NW ZDC resulted in a CWA & 3 sev turb pireps (fm a BE55, PA32 & C182) over the cntrl Appalachians between 21Z & 22Z. This event was similar to the 24 Feb 19 sev turb event, which occurred in the same area.

CAUSES INCLUDED:

- Increasing 700 hPa frontogenesis & 850 hPa cold air advection with some drying aloft (note the lack of clouds in the satellite/pirep pic)
- Weak vertical motions over the region with mid-level short-wave activity (not shown)
- High mtn ridges/peaks (3000 – 4000 ft+) and 35-65 kt WSW – W wind in the 850-700 hPa layer generated mtn waves, enhancing vertical motions

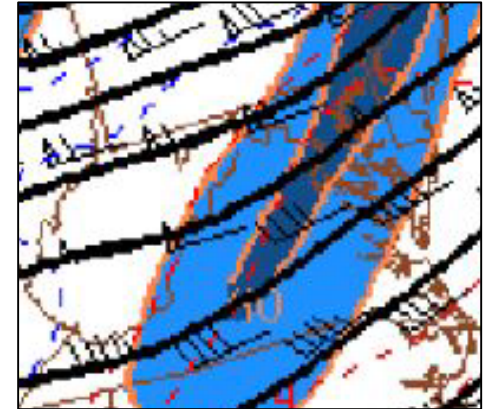
Sev turb pireps 2100Z – 2200Z



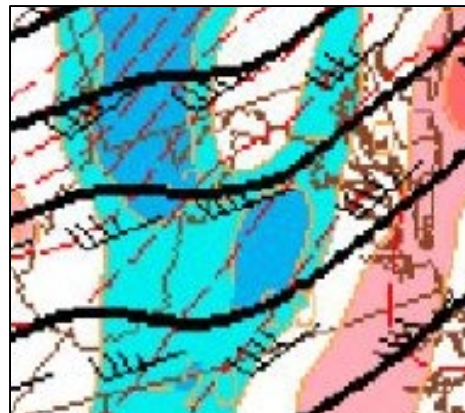
20Z 700 hPa Petterssen frontogenesis and 700 hPa hgt/temp/wind



22Z 700 hPa Petterssen frontogenesis and 700 hPa hgt/temp/wind



20Z 850 hPa hgt/temp/wind and temp advection (fill)



22Z 850 hPa hgt/temp/wind and temp advection (fill)

