Challenging 2019 Atlantic Cases for HAFS-globalnest

Andy Hazelton
The observed track was right of forecast for most of Dorian’s early life
Intensity was generally too low, as well
What caused the right jump? (Terrain? Shear?)
How sensitive was the long-term track near FL to this initial rightward motion?
Dorian Center Reformation

- HAFS predicted the general structure well (elongated vortex)
- Formation of a tight, closed circulation within this was tricky
- Potentially impacted by terrain, shear?
Some of the early forecasts completely missed intensification (even before land)

One example (2019082506) had shear that was 10 kt too strong

Storm was much more asymmetric, tilted than in reality
Dorian Evolution

- Much stronger shear in earlier forecasts
- Different (incorrect) evolution of the PVS/ULL to the west of Dorian
- To what extent did position differences/earlier intensification change this?
The track forecasts beyond D5 for both GFS and HAFSB were poor
Rather sudden increase
Seen in both the along-track and across-track errors
Jerry Long-Term Track

- HAFSB (and GFS) turned NE ahead of a trough
- Trough was well forecast 5-6 days out
- The storm was too far NE in the forecast (ridge to the NE too weak?)
- To what degree did this impact downstream storms (Karen)?