



Modeling Challenges Identified by Forecasters

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Modeling Issues Identified by Forecasters

● Genesis

- GFS/GEFS often too fast/aggressive
 - Generally anticipated thanks to retrospective runs provided by EMC
 - NHC especially noticed this late in the season in the EP
- Poor genesis forecasts (short lead time, low POD) in the subtropics and mid-latitudes
- Consistent with prior years, ECMWF still seems to miss a lot of TC genesis events, regardless of basin
 - Noted continued bias in ECMWF developing systems too soon off the west coast of Africa
- Continued challenges with genesis timing/detection in the Gulf of Mexico and off Southeast U.S. coast

Modeling Issues Identified by Forecasters

● Intensity

- Over-aggressive forecasts in environments of low shear but suboptimal thermodynamic properties in the tropical western Pacific, from both dynamical and statistical models
- TC-resolving models (HWRF, COAMPS-TC) often seem overeager to symmetrize core convection in environments of shear and/or ambient dry air, leading to high-biased intensity forecasts
- Difficulty timing onset of RI and East Pacific basin RI false alarms
- Situational poor performance of HWRF in the Atlantic basin
 - Notable high bias for systems in the Atlantic MDR (e.g., Fred, Elsa)
- Poor model track forecasts near land negatively affecting intensity forecasts, especially in the western Atlantic/Caribbean

Modeling Issues Identified by Forecasters

- **Track**

- Inconsistent track guidance for pre-genesis systems
- Leftward bias in ECMWF ensembles relative to other models and observed TC tracks was noted in several cases in the Atlantic and western Pacific
- Left-of-track bias for systems near/along the west coast of Mexico
- Frequent track correction in the down-shear direction due to poor handling of tilted TC vortices under moderate shear, especially for TCs < 65 kt