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### Are Forecasts of the Tropical Cyclone Radius of Maximum Wind Skillful?

**DATE:** Wednesday, July 24, 2024

**TIME:** 11:00 AM – 12:00 PM MT (VIRTUAL)

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In this presentation, we will discuss the current state of the art for RMW forecasting and how it has been motivated by storm surge modeling at the National Hurricane Center.

The radius of maximum wind (RMW) is a key structural parameter of tropical cyclones that describes how far the strongest winds are from the storm's center. The RMW is closely tied to significant hazards such as wind, storm surge, and rainfall. However, little forecast guidance is provided for the RMW resulting in forecasters using climatological estimates to help communicate hazard risk. In order to better forecast the RMW, we need to understand the performance of the few guidance techniques available. We compare RMW forecasts from the Hurricane Analysis and Forecast System (HAFS) to two statistical models and a climatological estimate. Forecasts of the RMW from HAFS are not competitive with statistical derivations of the RMW with marginally better to comparable skill for stronger tropical cyclones. The results indicate that there is a strong need for future improvements to better predict tropical cyclone structure in addition to track and intensity.

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