

Improved Eyewall Replacement Cycle Forecasting Using a Modified Microwave-Based Algorithm (ARCHER)

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The use of microwave imagery for Eyewall Replacement Cycle (ERC) forecasting has been mostly subjective up until now, and also rather limited because of the lack of quantitative tools to handle the information of eyewall development. This project has two goals: 1) To use objective TC center-fixing with the ARCHER algorithm to present forecasters with online, real-time trends in eyewall development; and 2) To integrate the results from ARCHER into a new ERC prediction scheme that will provide better probabilistic warnings of upcoming changes in TC intensity.

We will present the latest results of the online forecasting aide, and also share the progress of our predictive scheme. This predictive model is based on 1577 profiles of archer ring scores from 47 TCs, and uses Principal Component Analysis to establish the most effective predictors of TC development.