RAL/CGD SEMINAR SERIES

Subseasonal Rainfall Forecasts: An Operational Perspective for Pacific Island Applications

KATIE KOWAL
Associate Scientist, NOAA

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Extreme weather events can have devastating impacts on communities, and subseasonal hazard outlooks can support decision-makers' anticipatory actions to enhance preparedness. The international desk in NOAA's Climate Prediction Center develops hazard outlooks multiple weeks ahead as part of its operational efforts to support several developing regions, including Africa, Central Asia, Latin America, and the Pacific Islands. Subseasonal rainfall forecasts provide a critical input to these outlooks, and understanding their skill improves how useful the outlooks are for decision-makers. This talk focuses on the performance of subseasonal rainfall forecasts in the Pacific region, including analysis of how different postprocessing techniques may affect raw forecasts.

In the Pacific, subseasonal forecasts have the potential to perform well partially due to the proximity of the El Niño Southern Oscillation, but they also face special prediction challenges in part due to the small spatial scale of many islands. A few numerical weather prediction (NWP) models are considered, including GEFS, an NWP model produced at NOAA, in addition to other contributing models to the NMME and C3S forecasting ensembles. While several postprocessing techniques are available to bias correct NWP outputs, a couple standard methods (e.g. canonical correlation analysis) that are currently used at the desk and commonly taught to regional forecasters are emphasized here.