

## Seastate-Dependent Air-Sea Heat Fluxes with Sea Spray in High Winds: Physical Processes, Multiscale Interactions, and Future Possibilities for Observations and Modeling

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Air-sea fluxes of sensible and latent heat are fundamental to the structure and energetics of coupled atmosphereocean boundary layers (BLs) and storm systems in extreme conditions. The contributions of sea spray to highwind air-sea heat fluxes and corresponding impacts on storm structure and intensity are not well understood due to the difficulty of obtaining simultaneous, long-term measurements of spray, heat fluxes, and surface conditions in high-wind environments and to the challenge of representing complex seastate-dependent spray physics in weather forecast models. Here we present a new parameterization for seastate-dependent air-sea heat fluxes with spray, explore the multiscale interactions that it produces in coupled atmosphere-wave-ocean tropical cyclone (TC) simulations, and discuss ongoing work and future opportunities to constrain spray physics and air-sea fluxes using in situ observations....Link to Full Abstract Here.

Thursday, 26 September 2024, 2:00PM <mark>Refreshments 1:45PM</mark> Please also join colleagues for refreshments and informal discussion after the seminar until 3:30pm

> NSF NCAR-Foothills Laboratory, 3450 Mitchell Lane FL2-1022, Large Seminar Seminar will also be live webcast https://operations.ucar.edu/live-mmm

Participants may ask questions during the seminar via Slido.

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