The goals of this project are 1) to better understand how properties of the large-scale environment around hurricanes – wind shear, dry air, and sometimes Saharan dust – modulate hurricane structure and intensity; and 2) to characterize and understand the inner-core convective structures that do and do not lead to intensification. We use satellite observations of mid-level humidity and aerosols to build composite environments around intensifying or weakening storms. These are used in conjunction with very high resolution, high-quality numerical simulations to reproduce and understand the storm-environment interactions. Graduate assistants will be involved in compositing satellite data, performing simulations with the WRF model, and analyzing the hurricane-environment interactions. Students with undergraduate majors in sciences outside of meteorology are welcome to apply.

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