

**DESIGN OPTIMIZED LOCAL NUMERICAL WEATHER
PREDICTION MODEL FOR CAPE CANAVERAL AIR FORCE
STATION/KENNEDY SPACE CENTER**

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Numerical weather prediction provides valuable guidance to operational forecasters. A number of models have been developed, each simulating the atmosphere in different ways and using different input data. The objective of this research is to design an optimized Numerical Weather Prediction (NWP) model for Cape Canaveral Air Force Station (CCAFS) and NASA Kennedy Space Center (KSC). The optimization shall be for locally developing thunderstorms during the convective season (typically late May-mid Sep). These locally developing thunderstorms often occur during easterly flow and are caused by interaction of the sea breeze front from the Atlantic Ocean, and the river breeze fronts from the Indian River and Banana River.

There are many factors competing factors that are important to the performance of a local NWP model. This project will find the optimal mutually interacting combination of factors that are important to computer forecast model performance. Some of those factors are grid spacing, ensemble forecasting configuration, production cycle, assimilation of local data, water temperature of the Indian and Banana Rivers, and possibly other parameters that have yet to be tested in the CCAFS/KSC area.