



Is Saharan Dust a positive or negative for hurricanes? Observations and NU-WRF Simulations from the NAMMA and GRIP field campaigns

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During the Northern Hemisphere spring and summer months, outbreaks of Saharan dust move off the West African coast and over the tropical Atlantic Ocean. These clouds of Saharan dust can affect the convection associated with African Easterly Waves and developing tropical cyclones. Previous studies have indicated the potential for both positive (aerosol-cloud microphysical interactions) and negative (reduced moisture, increased stability) impacts of the Saharan Air Layer (SAL) on convective structure and evolution. This study attempts to sort out how these various factors can play out in convective development associated with developing tropical cyclones by using observations of selected cases from the 2006 NASA African Monsoon Multidisciplinary Analyses (NAMMA) and 2010 Genesis and Rapid Intensification Processes (GRIP) field campaign. Additionally, simulations from the NASA Unified Weather Research and Forecasting (NU-WRF) will be utilized to constrain these observations and determine the overall effect of the SAL (from a microphysical, thermodynamical, and dynamical standpoint) on developing tropical cyclones.