

عنوان مقاله:

Sensitivity Study of Cyclone Gonu Intensity and Track to Surface Exchanges Parameterization: Advanced hurricane WRF model application

محل انتشار:

هفتمین سمپوزیوم بین المللی پیشرفتهای علوم و تکنولوژی (سال: 1391)

تعداد صفحات اصل مقاله: 8

نویسندگان:

H Malakooti - *Department of Meteorology, Faculty of Atmospheric-Oceanic Science and Technology, University of Hormozgan, Bandar Abbas, Iran*

M.Ali Mohamadi - *Department of Meteorology, Faculty of Atmospheric-Oceanic Science and Technology, University of Hormozgan, Bandar Abbas, Iran*

خلاصه مقاله:

Real-time forecasting errors of a tropical cyclone include 1) excessive intensification prior to landfall, 2) insufficient momentum exchange with the surface, and 3) inability to capture rapid intensification when observed. To estimate these errors, several parameterizations of surface exchanges and horizontal resolution have been designed and tested as part of what is termed the Advanced Hurricane WRF (AHW) model. In this study, Gonu tropical cyclone (2007) that it was formed in the Arabian Sea was selected. Based on sensitivity simulations of Gonu storm, the maximum wind and minimum sea surface pressure, was found to be sensitive to surface momentum exchange and model resolution. The simulated of rapid intensification in Guno was not significantly improved until the grid spacing approached 9 km and Donelan parameterization for momentum and Large and Pond parameterization for heat and enthalpy exchanges are found more efficient for this case. Also the simulated track was found to be more sensitive to model resolution.

کلمات کلیدی:

Gonu, Cyclone, Intensity, AHW

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