



The relative role of ocean-atmosphere interaction and African easterly waves in the generation and development of Tropical cyclones in the North Atlantic

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We use the regionally coupled ocean - atmosphere model ROM and its atmospheric component REMO in standalone configuration in order to assess the relative role of ocean feedbacks and the African easterly waves in the simulation of tropical cyclonic activity in the Atlantic ocean. To this end, a number of coupled and uncoupled simulations forced by ERA-Interim boundary conditions have been carried out. In one set of simulations, the atmospheric domain includes the Northern Africa land masses, where the easterly waves are formed. In a second set of simulations, the easterly waves are taken from the ERA Interim reanalysis, as atmospheric domain excludes explicitly the African land masses.

We study the statistics of modeled tracks of the tropical cyclones in the simulations. We found that the coupling has a strong impact on the number of tropical cyclones generated in the Northern Tropical Atlantic. In the coupled run it was close to the observations, while in the uncoupled runs the number of tropical cyclones was strongly overestimated. The coupling also influences the simulated position of the ITCZ.