

Seasonal Predictions of Tropical Cyclones in 2018 using GFDL and NICAM High-Resolution Global Models

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We conduct real-time seasonal forecast using high-resolution global models (GFDL-FLOR, GFDL-HiFLOR, and NICAM) that have skill in predicting tropical cyclone statistics over the global ocean basins. The seasonal predictions starting from 2018 July initial conditions show above normal frequency of tropical cyclones in the Western North Pacific and Central Pacific Oceans as observed. To understand physical mechanisms behind the active storm season in the Pacific, we conducted idealized seasonal forecasts by changing sea surface temperature spatial patterns, which is so called "real-time attribution" simulations. We find out that warmer subtropical Pacific associated with positive Pacific Meridional Mode (PMM), rather than central Pacific El Nino, was responsible for the active storm season. In the presentation, we will also show preliminary results for impact of anthropogenic forcing on the 2018 active storm season.

Keywords: Tropical Cyclone, Seasonal Prediction, Pacific Meridional Mode, Anthropogenic Forcing, Typhoon, Global Warming