

高解像度全球非静水圧モデルにおいて海洋結合が台風予測に及ぼす影響

Impact of ocean coupling on typhoon prediction in high-resolution nonhydrostatic global model

*Sasaki Wataru¹、大西 領¹、淵上 弘光²

*Wataru Sasaki¹, Ryo Onishi¹, Hiromitsu Fuchigami²

1.海洋研究開発機構、2.NEC情報システムズ

1.JAMSTEC Japan Agency for Marine-Earth Science and Technology, 2.NEC Informatec Systems, Ltd.

Accurate prediction of typhoon intensity and track is crucial to mitigate a typhoon disaster. An intercomparison of nonhydrostatic global atmospheric models has been conducted with the aim of improving typhoon prediction under the JAMSTEC Earth Simulator Strategic Project with Special Support. Three models (Double Fourier Series (DFS), Nonhydrostatic ICosahedral Atmospheric Model (NICAM), and Multi-Scale Simulator for Geo-Environment (MSSG)) were configured with a horizontal resolution of 7-km, and 52 forecast experiments during September-October 2013 were performed (see also Sawada et al. in the same session). In addition to that, we performed forecast experiments, where an ocean general circulation model is coupled in the MSSG, to investigate the impact of ocean coupling on typhoon prediction. It was found that the prediction error of typhoon intensity ranged between -10 to 10 hPa at a lead time of up to 60 hours in all models, while the typhoon intensity was under-predicted by 20 hPa in the JMA operational global model (20-km grid spacing). No marked difference was found in the predicted typhoon intensity at a lead time of up to 36 hours between MSSG simulations with and without ocean coupling; however, the predicted typhoon intensity was reduced after a lead time of 36 hours in the case where the ocean is coupled.

キーワード：台風、海洋結合、非静水圧全球モデル

Keywords: typhoon, ocean coupling, nonhydrostatic global model