

## Data Assimilation Studies using Big Observation Data in the Projects of Post K and BDA

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In the projects of 'Advancement of meteorological and global environmental predictions utilizing observational Big Data' of 'The post K computer development plan of the FLAGSHIP2020 Project' and 'Innovating "Big Data Assimilation" Technology for Revolutionizing Very-short-range Severe Weather Prediction', the data assimilation techniques including the coupling with the ocean model have been developed to improve the prediction accuracy of heavy rainfalls, typhoons and tornadoes, and to obtain the longer leading time (the time from the prediction to the occurrences of severe phenomena). The most of these studies were conducted by using the super computer 'K' and Big Observation Data. In this presentation, the impacts of rapid scan atmospheric motion vector and sea surface temperature of Himawari-8 on the Typhoon intensity and track predictions and on the rainfall predictions of heavy rainfalls, the assimilation results of all-sky radiance data in the convection scale prediction, and the reproduction of rainfall system that caused tornadoes by the data of Polarization radar and dense surface observation network will be presented.

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