

Sensitivity of different physics schemes using WRF model in Typhoon Damrey (2017) over the Indochina region.

To reduce the tropical cyclone impact of lives and economics, the precise forecast of the event is required. The weather research and forecasting (WRF) model was applied for simulating typhoon Damrey (2017) caused ravaging of the strong wind, heavy precipitation, flash flood and storm surge over the Indochina region. The simulated duration was 8 days starting from 31 October 2017 00 00 UTC to 8 November 2017 00 00 UTC. The initial and lateral boundary conditions were driven by NCEP global FNL (final analysis) data available at 1-degree resolution. The WRF model was run in a single domain of 20 km horizontal resolution bounded 0 to 20 N and 96°E to 124°E. The different physics schemes, which are the microphysics schemes, the planetary boundary layer schemes and cumulus parameterization schemes, were emphasized to examine the suitable schemes in tropical cyclone simulation over the Indochina region. To evaluate the reliability of the simulation of tropical cyclone, the track-position is correlated with the Japan Meteorological Agency (JMA) observation. The results show that the typhoon simulation forced by Kain-Fritsch cumulus, Kessler microphysics and Yonsei university planetary boundary layer was suitable for simulating of typhoon Damrey.

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Track Classification: Environmental Physics, Atmospheric Physics, Geophysics and Renewable Energy