

Huang, Q., X. Ge, and M. Peng, 2020: Impacts of an upper-level easterly wave on the sudden track change of Typhoon Megi (2010). *J. Meteor. Soc. Japan*, **98**, <https://doi.org/10.2151/jmsj.2020-069>.

**Plain Language Summary:** The Advanced Weather Research and Forecasting (WRF-ARW) model is used to investigate possible influences of a predominantly upper-level easterly wave (EW) on Typhoon Megi's (2010) sharp northward turn on 20 October, 2010 after passing over the Philippines. In the presence of the upper-level easterly wave (EW), the simulation reasonably well produced the sudden track change of Megi.

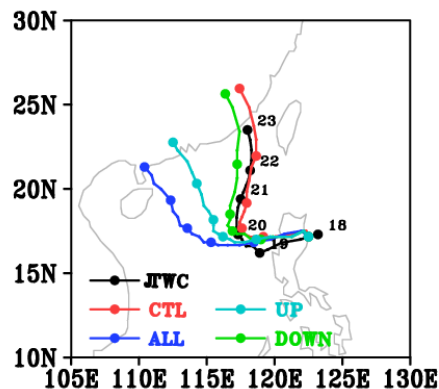


Figure 1. The observed and simulated tracks of Megi from 18 to 23 October 2010.

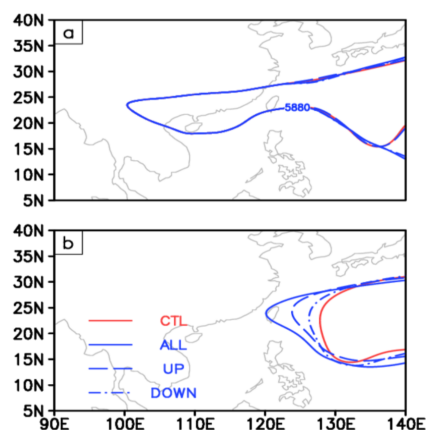


Figure 2. The spatial pattern of the WPSH in the four experiments highlighted using the 5880-gpm contour: (a) at the initial time on 18 October, and (b) on 20 October.

- An upper-level EW slows down Megi's westward propagation to locate in the eastern semicircle of the nearby monsoon gyre, by which the enhanced southerly steering flow leads to a sharp northward turn.
- The cyclonic vorticity induced by the middle-level convergence erodes the western flank of the western North Pacific Subtropical High and thus changes the steering flow.