

Synoptic-scale Predictability of Heavy Rain over Western Japan in July 2018

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Heavy rain event occurred between 5 and 8 July 2018 over western Japan. Japan Meteorological Agency (JMA) had published a press release about the event at 1400 JST 5 July before the event began. Using week ensemble prediction data and reanalysis data by JMA, predictability of westerly jet at middle troposphere and moisture flux at lower troposphere, which are main factors of heavy rain by Baiu front, are analyzed. The ensemble prediction initialized after 12 UTC 30 June well predicted meridional position of westerly jet at middle troposphere. However, horizontal moisture flux maximum at lower troposphere was predicted over the East China Sea at that time. The moisture flux flowing to western Japan was firstly predicted at 00 UTC 1 July. An upper trough developing over Eurasia Continent affected the westerly jet prediction. On the other hand, formation position of Typhoon 1807 (Prapiroon) east of Taiwan determined the zonal position of moisture flux. Predictability of rain continuance is affected by an upper ridge propagated from Eurasia Continent which is well predicted after 3 July.

Keywords: Baiu front, Predictability, Ensemble prediction