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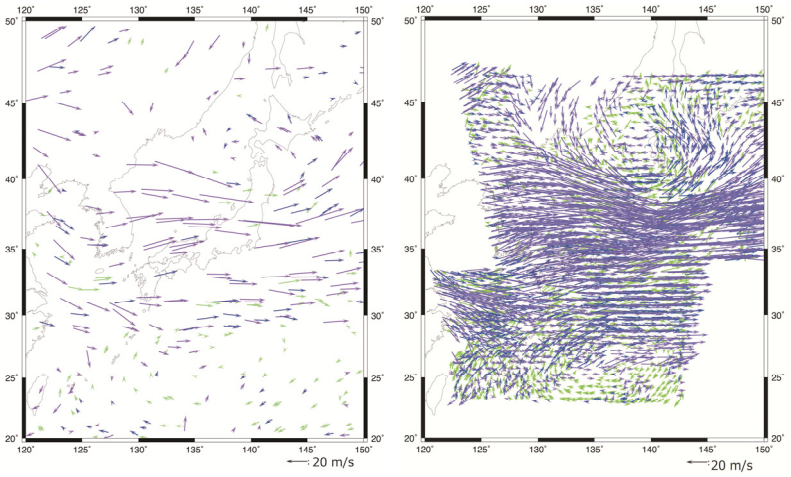
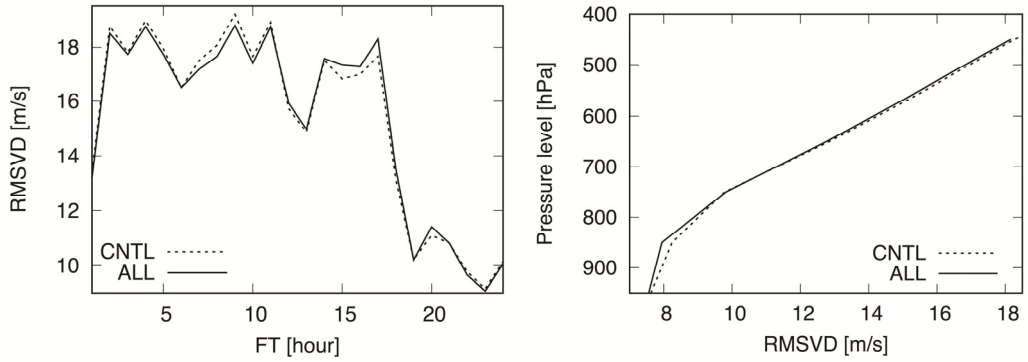



←
Figure. 1. The spatial distribution of assimilated AMVs during the period 06:00–09:00 UTC on 20 June 2016 around Japan. Purple, blue, and green arrows represent high-, mid-, and low-level winds, respectively. CNTL with RTN-AMVs (left), ALL with RS-AMVs (right).




↑ Figure. 2 Forecast winds in northern Japan validated against WPR observations. RMSVDs at each forecast hour (left) and profiles of RMSVD averaged over the whole fore-cast period (right). The solid lines and dashed lines represent ALL and CNTL, respectively.

- Data assimilation experiments on a cold vortex event in June 2016 were conducted using AMVs derived from Himawari-8 2.5 min rapid scan imagery over Japan (RS-AMVs).
- RS-AMVs in ALL experiment distinctly represent the wind field near the cold vortex over northern Japan with much denser data than hourly AMVs routinely computed from 10 min full disk scans (RTN-AMVs) in CNTL experiment, which also indicated the location of the vortex but less clearly with many fewer data (Fig. 1)**.**
- The wind forecasts in ALL improved slightly in early forecast hours before 12 hours in northern Japan, over which the vortex passed during the assimilation period. They also showed small improvements at low levels when averaged over the whole forecast period. (Fig. 2).