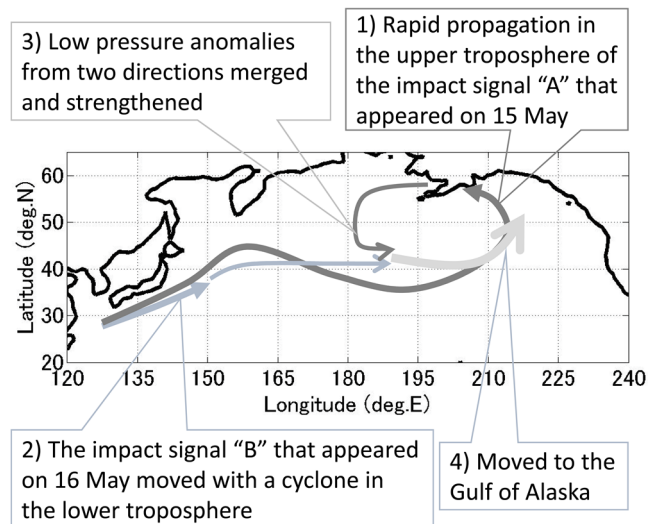
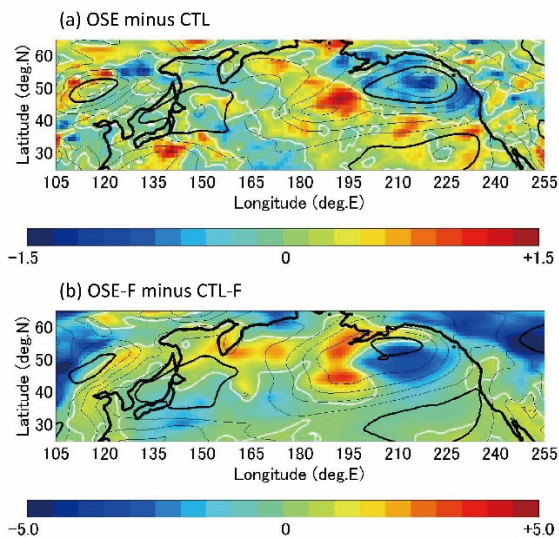


Kawai, Y., Q. Moteki, A. Yoshida-Kuwano, T. Enomoto, A. Manda, and H. Nakamura, 2017: Impact propagation of radiosonde data assimilation over the Kuroshio and Kuroshio Extension: Case study on the early summer (Baiu) in 2012. *J. Meteor. Soc. Japan*, **95**, 71-90.

<https://doi.org/10.2151/jmsj.2017-004>



SLP difference (hPa; colored) averaged from 0000 to 1800 UTC on 21 May 2012 (a) between the assimilation experiments (OSE minus CTL) and (b) between the forecast experiments (OSE-F minus CTL-F). SLPs in the (a) CTL and (b) CTL-F experiments are contoured for every 4 hPa (bold lines for 1000 and 1020 hPa). Extra radiosonde data over the East China Sea are not assimilated in the CTL and CTL-F runs.

Schematic picture of the propagation of the impact signals from the East China Sea to the Gulf of Alaska in the case of mid-May 2012.

- In order to investigate how perturbations caused over the Kuroshio or Kuroshio Extension (KE) grow and propagate across the North Pacific Ocean, the authors performed observing system experiments using two extra sets of radiosonde data obtained over the East China Sea (ECS) in mid-May and over the KE in early July.
- The impact of the extra data assimilated propagated eastward mainly due to the advection by the subtropical jet, and led to reinforcement of a cyclone over the Gulf of Alaska in mid-May.
- In the case of mid-May, the impact signal that emerged over the ECS on 15 May quickly propagated eastward in the upper troposphere. Another impact signal that appeared in the lower troposphere on 16 May travelled eastward and merged with the preceding one, which resulted in the reinforcement of the cyclone.