

Murazaki, K., H. Tsujino, T. Motoi, and K. Kurihara, 2015: Influence of the Kuroshio large meander on the climate around Japan based on a regional climate model. *J. Meteor. Soc. Japan*, **93**, 161-179.
<https://doi.org/10.2151/jmsj.2015-009>

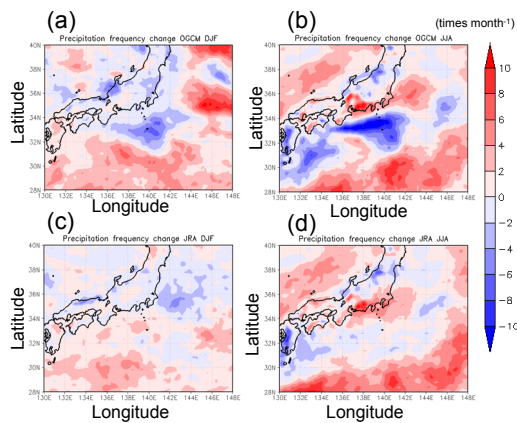


Fig. 1 Changes in seasonal averaged frequencies of high intensity rainfall events (times month⁻¹) between the Kuroshio large meander and straight path phases as predicted by the OGCM run for (a) winter (December–February) and (b) summer (June–August), and by the JRA run for (c) winter and (d) summer.

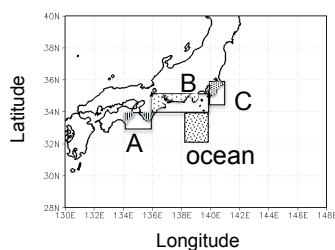


Fig. 2 Definition of three land areas and the cold SST pool area used in the analysis of the effects of the Kuroshio large meander on Japan's weather.

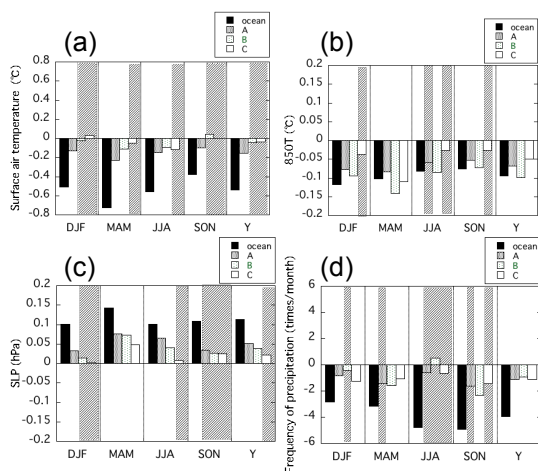


Fig. 3 Area-averaged seasonal changes between the Kuroshio LM and SP phases in terrestrial (a) SAT (°C), (b) temperature at 850 hPa (°C), (c) SLP (hPa) and (d) frequency of high intensity rainfall events (times month⁻¹). The horizontal axis represents the four seasons (DJF, MAM, JJA, SON) and year average (Y). Hatched areas indicate no significant difference at the 90% level.

- The impact of the Kuroshio large meander on the climate around Japan was investigated by using a high-resolution North Pacific Ocean General Circulation Model and a 20km resolution regional climate model. The conclusions of an 8-year composite analysis of the model simulation for the Kuroshio large meander and straight path are as follows.
- Substantial decreases in the frequency of precipitation over the ocean are caused in both winter and summer by the cold sea surface temperature anomaly caused by the Kuroshio large meander (Fig.1).
- Similar effects are evident over the land area of Japan, although they are less intense, at most 20-50% of magnitude over the cold sea surface temperature anomaly area, and limited to the coastal region on the Pacific Ocean side in the central part of the country (Figs.2 and 3).