

Spatiotemporal variability of Sea surface water temperature gradient in the western North Pacific

*Shoto Suzuki¹

1. Tokai University Graduate School of Marine Science and Technology

Sea surface temperature fronts (SST front) are formed and maintained mainly by processes of ocean dynamics. These SST fronts are, therefore, not easily disappeared by heat transformation between the atmosphere and ocean through the sea surface. This suggests that SST fronts are very important factors as forcing from the ocean to the atmosphere. Strong SST fronts are generally formed in western regions in each basin.

In this study, we analyzed the SST fronts formed in the western North Pacific, that is, in the Oyashio-Kuroshio interfrontal zone to elucidate characteristics of its spatiotemporal variability using MGD SST released by Japan Meteorological Agency. As a result, we reaffirmed two strong SST fronts, one is located along the Kuroshio Extension (south side) and another is along the Oyashio fronts (north side). These fronts indicate strong seasonal variability. The SST front located on the south side, in particular, disappeared in summer. This indicates that SST fronts are strongly affected by sea surface heat flux. On the day of our presentation, we would like to discuss the temperature front of the ocean interior connected the SST fronts using the 3D T/S dataset of ARMOR3D.

Keywords: Sea surface temperature fronts (SST front), Kuroshio, Oyashio