

The Kuroshio large meander in 2017 and its coastal impact reproduced by a 2-km resolution assimilation model

*Nariaki Hirose¹, Norihisa Usui¹, Kei Sakamoto¹, Goro Yamanaka¹, Nadao Kohno¹

1. Meteorological Research Institute, Japan Meteorological Agency

The Kuroshio large meander (KLM) occurred in the end of August 2017 for the first time in 12 years. In order to reproduce this event and investigate its impact on coastal regions, we conducted assimilation and forecast experiments using a 2-km resolution assimilation model, which has been developed at the Meteorological Research Institute of Japan Meteorological Agency (MRI/JMA) for the purpose of operational use in JMA. The assimilation model succeeded in reproducing formation process of the KLM in 2017 as well as associated variations in sea level and water temperature in coastal regions. It is reported that sudden strong current so-called Kyusho occurred in the southeast coast of Shikoku in September 2017. The assimilation results show that this Kyucho event is caused as a result of propagation of a disturbance with cyclonic circulation along the Kuroshio. Besides, in the end of October, warm Kuroshio water was intruded into coastal regions in Shizuoka, Aichi and Mie prefectures in the central part of Japan. This warm water separates from a northward current in the eastern flank of the large meander. In the presentation, forecast results will also be shown to discuss more detailed process.