Upgrade of JMA's Global Ensemble Prediction System for One-month Prediction

The Japan Meteorological Agency (JMA) plans to upgrade its Global Ensemble Prediction System (GEPS) on 14th March 2023 and its products for one-month prediction will be available on 16th March 2023. In this upgrade, the area applied by the two-tiered Sea Surface Temperature (SST) method based on prediction using the Seasonal Ensemble Prediction System (Seasonal EPS) will be expanded from tropical and sub-tropical oceans to whole global ocean. Also, on top of model physics improvements, the model topography will be upgraded by using high-quality Digital Elevation Model (DEM) data.

Figure 1 demonstrates the improved prediction skill for surface temperature by adding effects of ocean variations in mid-latitudes. It is expected GEPS will provide more informative prediction including sub-seasonal heat/cold wave.

The hindcast gridded data and the verification results for the upcoming Global EPS are available on the following website respectively:

・The hindcast gridded data

https://ds.data.jma.go.jp/tcc/tcc/gpv/index.html

・The hindcast verification results

https://www.data.jma.go.jp/tcc/tcc/products/model/hindcast/1mE.GEPS2303/index.html
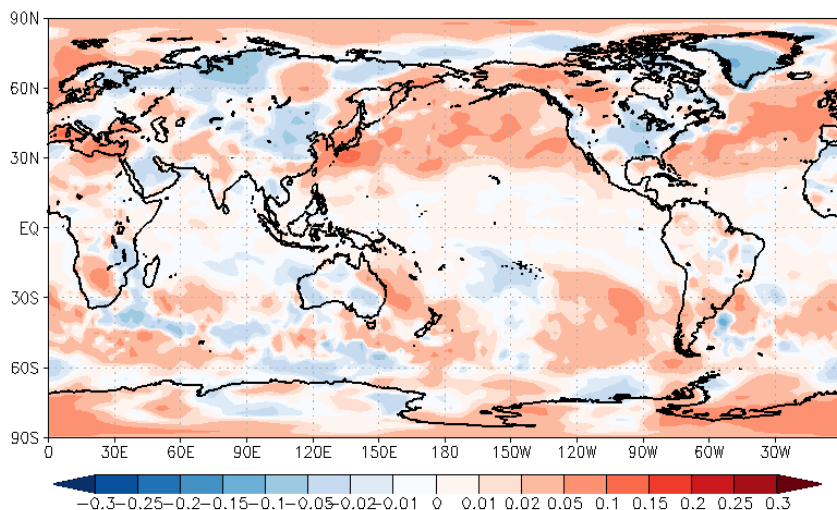

Figure 1. Anomaly correlation difference for one-month surface temperature prediction in boreal summer between the current (GEPS2203) and the next (GEPS2303) systems estimated by 30-year (1991-2020) hindcast. Warm and cold colors indicate improved and degraded regions respectively.