



The APEC CLIMATE CENTER
Climate Outlook for October 2017 – March 2018

BUSAN, 25 September 2017 – The synthesis of the latest model forecasts for October 2017 to March 2018 (ONDJFM) from the APEC Climate Center (APCC), located in Busan, South Korea, indicates a persistent near normal temperature anomaly across the tropical Pacific with a weak negative to neutral El Niño-Southern Oscillation (ENSO) phase. The forecasts show positive temperature anomalies to prevail over the globe, with highly probable above normal temperatures over the subtropical North Pacific and Atlantic for the forecast period. The forecast for the same period suggests above normal rainfalls over the southern Philippine Sea and central off-equatorial Pacific. For the equatorial western Pacific, strong negative precipitation anomalies are predicted.

Current Climate Conditions

In July through early September, the ENSO phase remains slightly positive to neutral. Positive seasonal mean temperature anomalies were observed over the Arctic, eastern and western Eurasia, and western North America. Negative temperature anomalies prevailed over the eastern Indian Ocean and some austral seas. Positive precipitation anomalies prevailed over the maritime continent and most of Africa. Negative precipitation anomalies spanned Kazakhstan, western Russia, western and central equatorial Pacific, and North America.

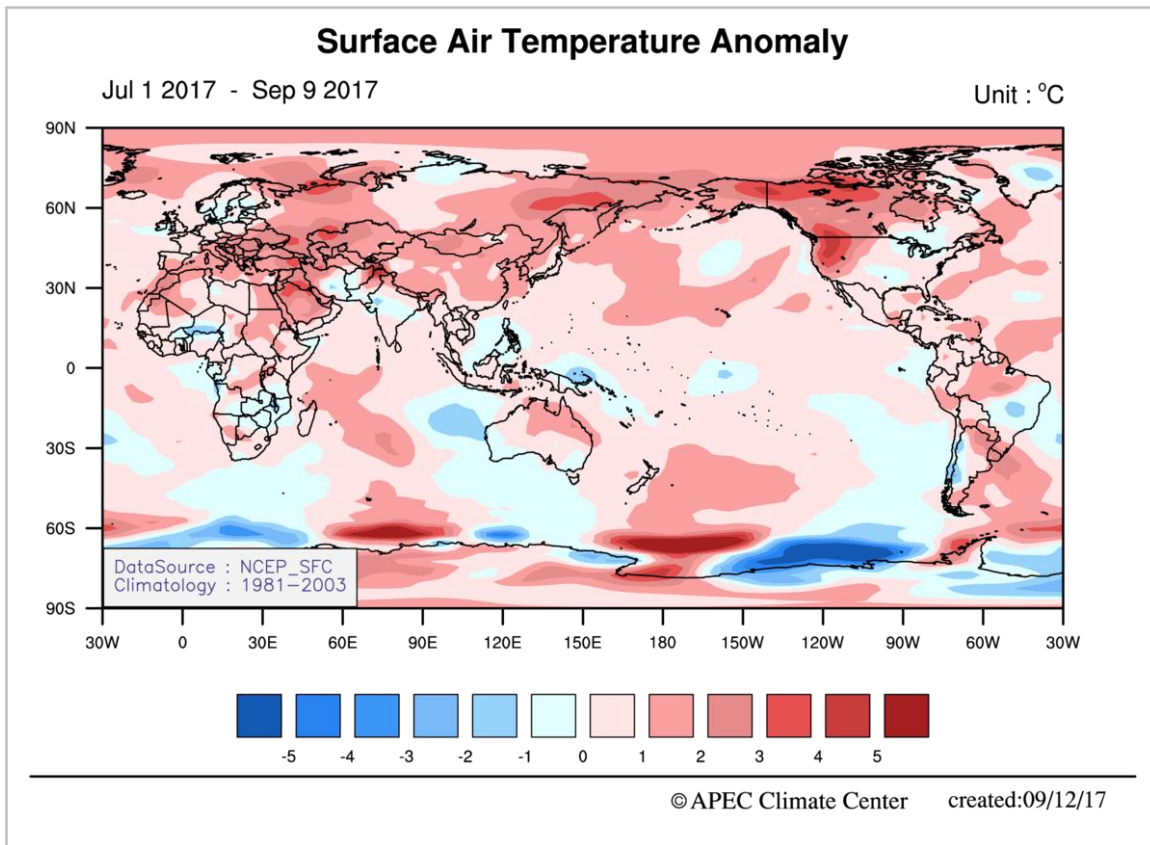


Fig. 1. Seasonal mean anomalies of the observed surface air temperature (1 July – 9 September 2017).

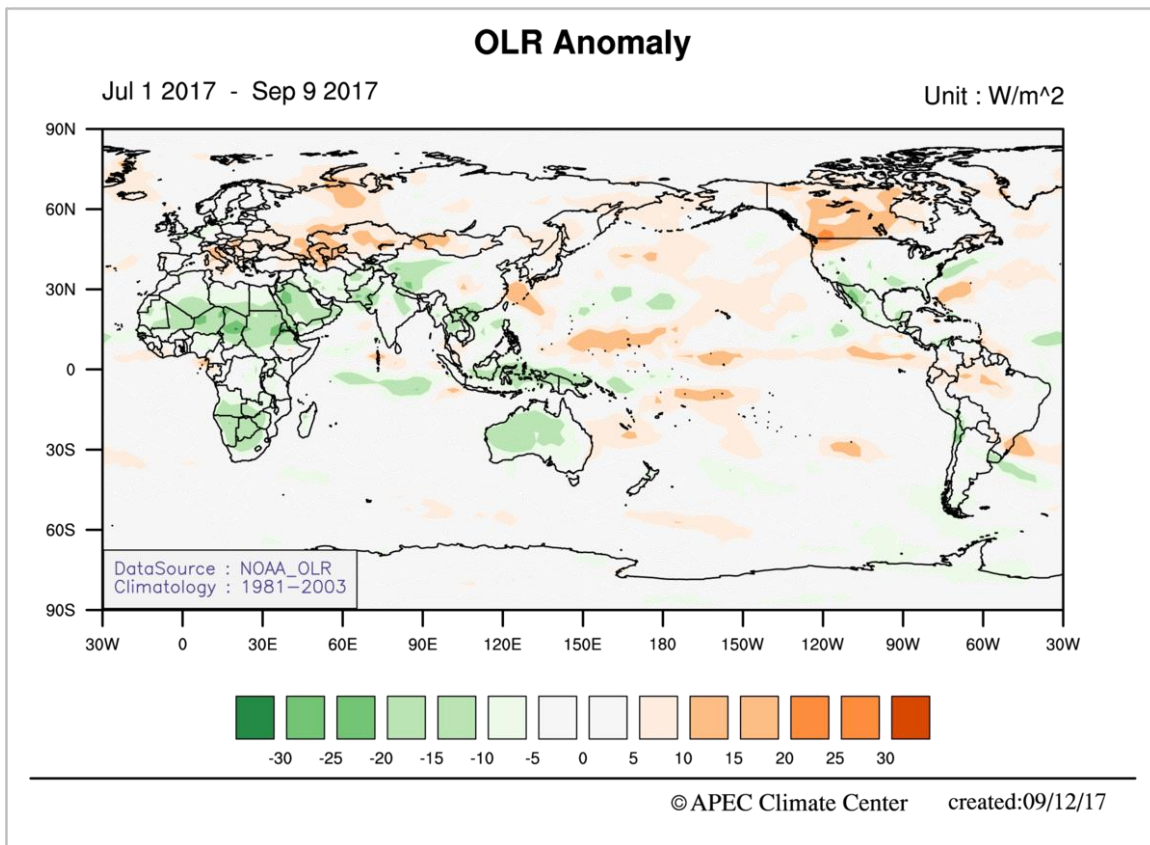


Fig. 2. Seasonal mean anomalies of the observed outgoing longwave radiation (1 July – 9 September 2017).

Forecast

Sea Surface Temperature and ENSO Outlook:

The prevailing ENSO phase is expected to be neutral to slightly negative. A tongue of weak negative SST anomalies in the equatorial Pacific is predicted. The weak positive SST anomalies are expected to surround this cold tongue and span the tropical Pacific, which corresponds to a slightly negative Niño 3.4 index. A positive Indian Ocean Dipole (IOD) is predicted to continue throughout the first half of the forecast period, weakening slightly and becoming neutral by the second half of the forecast period without any significant zonal gradients in Indian Ocean.

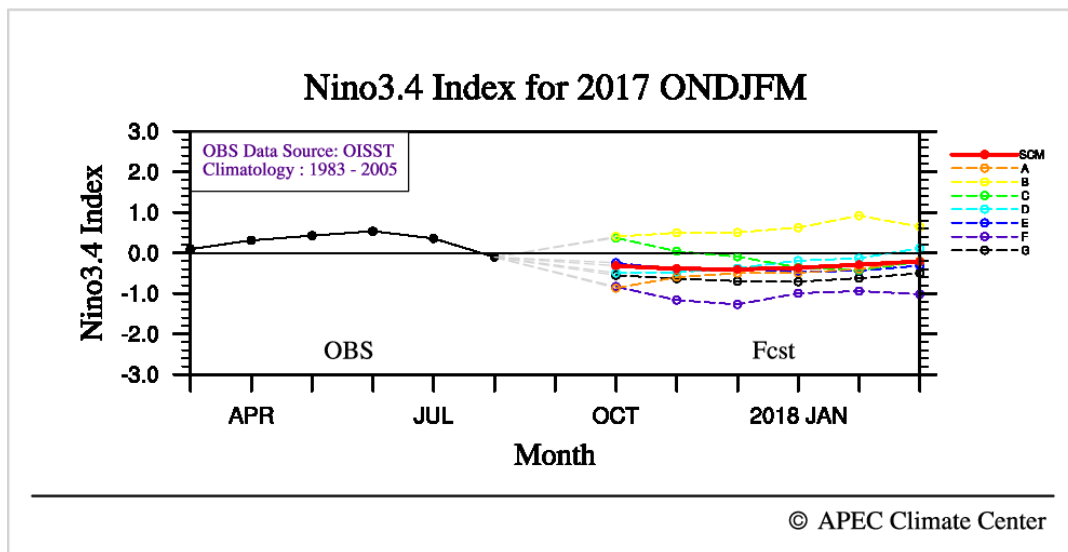


Fig. 3. Predicted Niño 3.4 Index from individual models (A, B, C, D, E, F and G) and the simple composite Multi-Model Ensemble (MME) method (SCM).

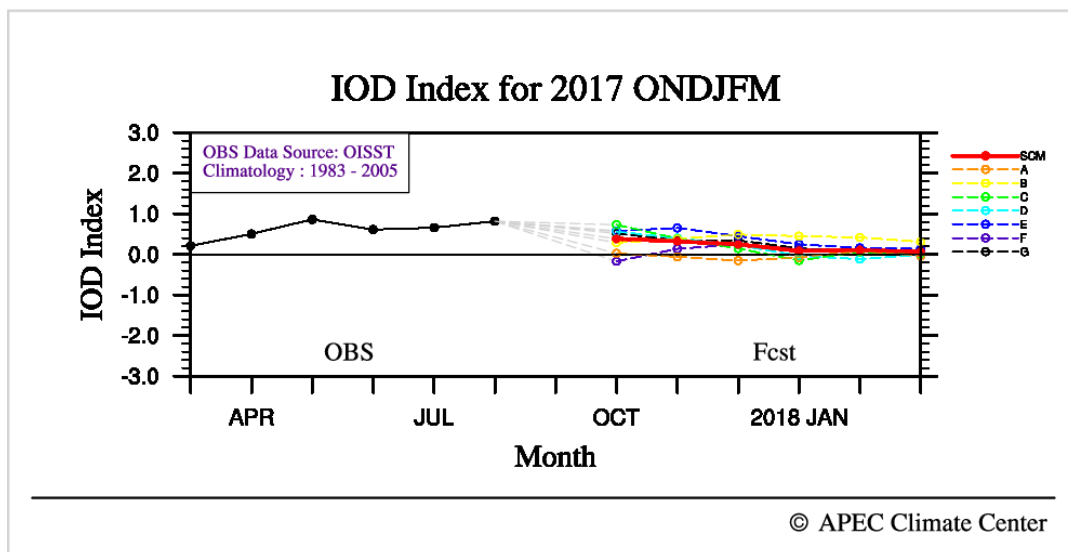


Fig. 4. Predicted Indian Ocean Dipole mode index (IODMI) from individual models (A, B, C, D, E, F and G) and the SCM.

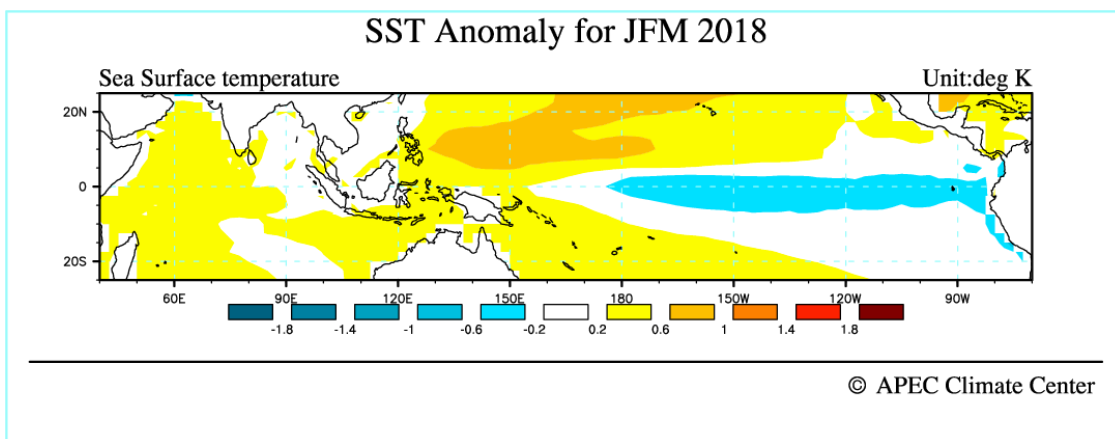
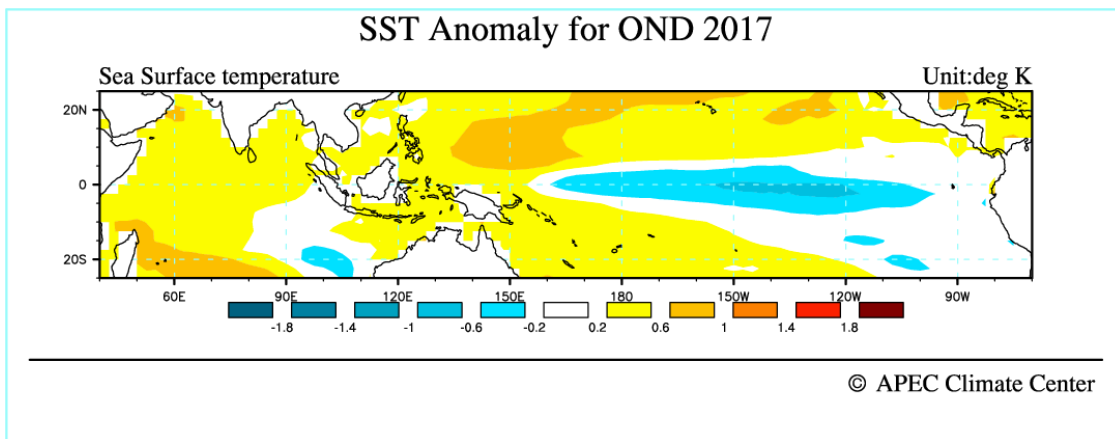


Fig. 5. Spatial distributions of forecasted SST anomalies for October 2017 – March 2018 over the tropical Indo-Pacific. The top panel shows the SST anomaly forecast for October – December 2017 and the bottom panel shows the SST anomaly forecast for January – March 2018.

Temperature and Precipitation Outlook:

1. Forecast for October – December 2017

Strongly enhanced probability for above normal temperatures is predicted for the most of Pacific except for the northeastern part and central and eastern equatorial part, maritime continent, most of Atlantic, Bay of Bengal, Arabia Sea, western and eastern Indian Ocean, Norwegian Sea, Antarctic, and Caribbean Sea. Enhanced probability for above normal temperatures is expected for the Okhotsk, East Siberian, Laptev, Kara, and Barents Seas, most of China, central Russia, and most of Africa and South America. A tendency to near normal temperatures is predicted for the central and eastern equatorial Pacific. Enhanced probability for below normal temperatures is expected for the eastern Indian Ocean and some parts of the austral seas. Enhanced probability for above normal precipitation is predicted for the Barents, Greenland, Laptev, East Siberian, and southern Philippine Seas, and off-equatorial central North Pacific. A tendency to enhanced probability for above normal precipitation is expected for the Arctic, Arabian and Caribbean Sea, and northern Russia. Strongly enhanced probability for below and near normal precipitation is predicted for the equatorial western and central Pacific, respectively. Enhanced probability for near normal precipitation is predicted for the North Africa.

2. Forecast for January – March 2018

Strongly enhanced probability for above normal temperatures is predicted for the subtropical Pacific except for northeastern and northwestern part and central and eastern equatorial part of it, maritime continent, most of North Atlantic, Norwegian and Bering Seas, and Gulf of Mexico. Enhanced probability for above normal temperatures is expected for the Arctic, Antarctic, and most of Eurasia. A tendency to near normal temperatures is predicted for the central and eastern equatorial Pacific. Enhanced probability for below normal temperatures is expected for the northeastern North Pacific. Enhanced probability for above normal precipitation is predicted for the Norwegian, Barents, Laptev, and southern Philippine Seas, and off-equatorial western and central North Pacific. Enhanced probability for below normal precipitation is expected for the equatorial western and central Pacific. Enhanced probability for near normal precipitation is predicted for the equatorial eastern Pacific and North Africa.

The APEC Climate Center is a major APEC science facility, which was established in November 2005 during the leaders meeting of the Asia-Pacific Economic Forum in Busan, Korea. It produces seasonal and monthly forecasts of climate conditions for all seasons around the globe. APCC collects seasonal forecasts from 16 institutes in the APEC region: the Australian Bureau of Meteorology, Meteorological Service of Canada, Beijing Climate Center China, Institute of Atmospheric Physics China, Japan Meteorological Agency Japan, Korea Meteorological Administration Korea, Pusan National University Korea, Met Office United Kingdom, Euro-Mediterranean Center on Climate Change Italy, Hydrometeorological Research Center of Russia, Voeikov Main Geophysical Observatory of Russia, Central Weather Bureau Chinese Taipei, National Aeronautics and Space

Administration USA, National Centers for Environmental Prediction USA, International Research Institute for Climate and Society USA, and the Center for Ocean-Land-Atmosphere Studies USA.

The APCC climate forecasts are based on model simulations from 16 prominent climate forecasting centers and institutes in the APEC region. These forecasts are collected and combined using state-of-the-art schemes to produce a statistically 'consensual' forecast. The APCC forecasts are based not just on the magnitude of the seasonal changes that are predicted, but also take into account their simulated probability. Further details as well as the verification for the forecasts on a long term basis are available at <http://www.apcc21.org>. Historical verification of the forecast performance is based on a retrospective forecast period of all the models for the period 1983-2005.

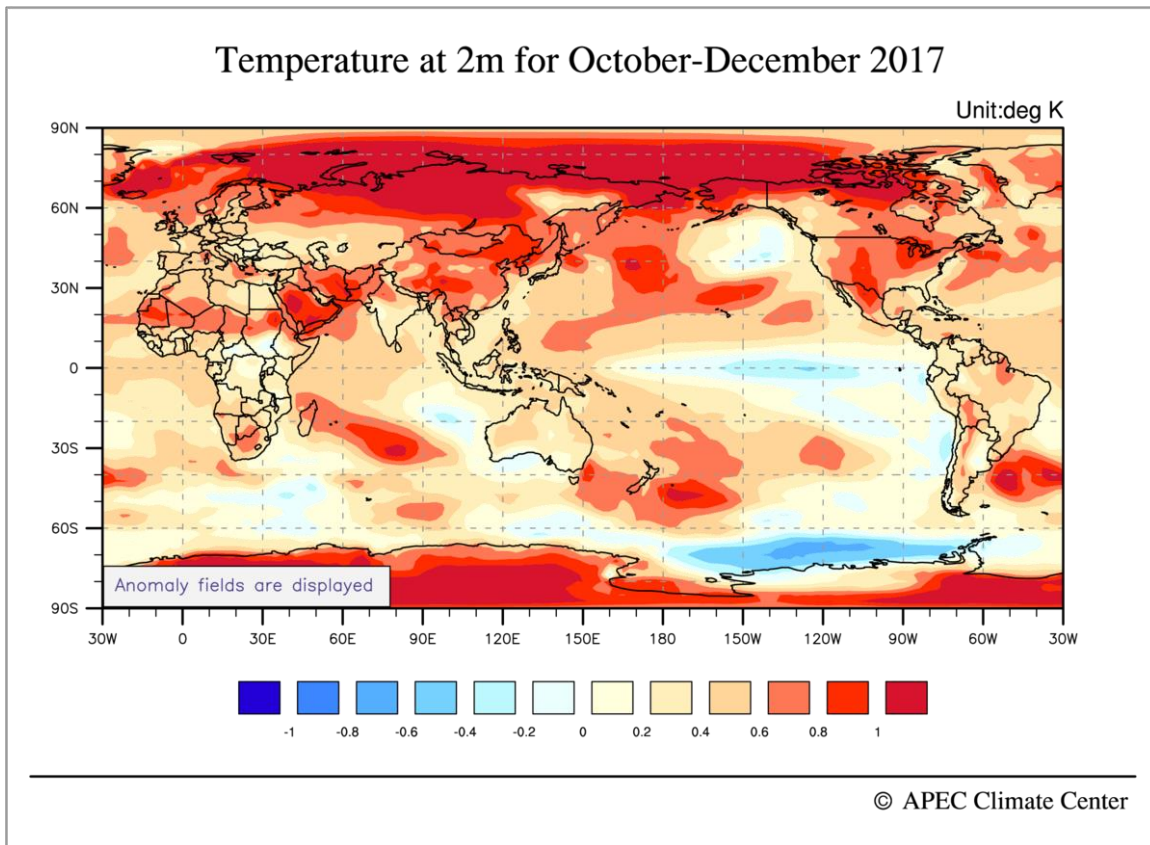


Fig. 6. Deterministic MME seasonal 2m temperature forecast for October – December 2017.

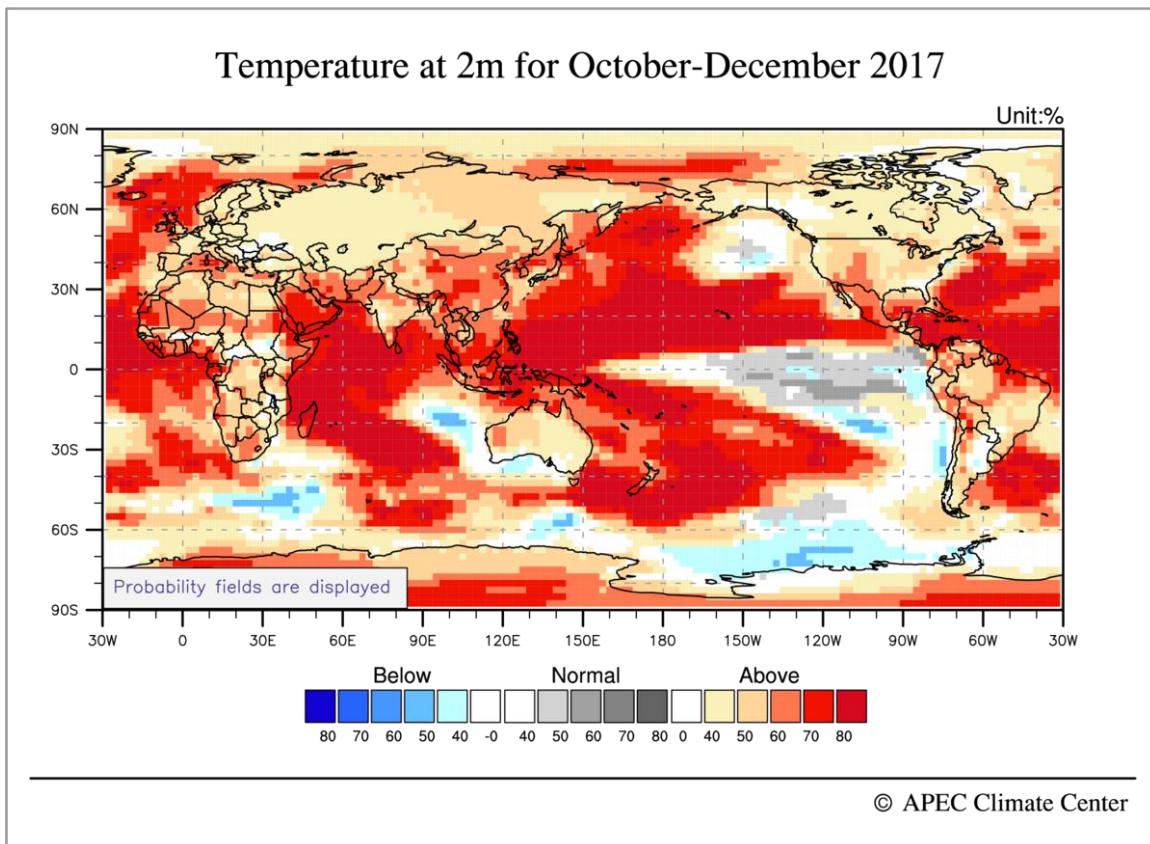


Fig. 7. Probabilistic MME seasonal 2m temperature forecast for October – December 2017.

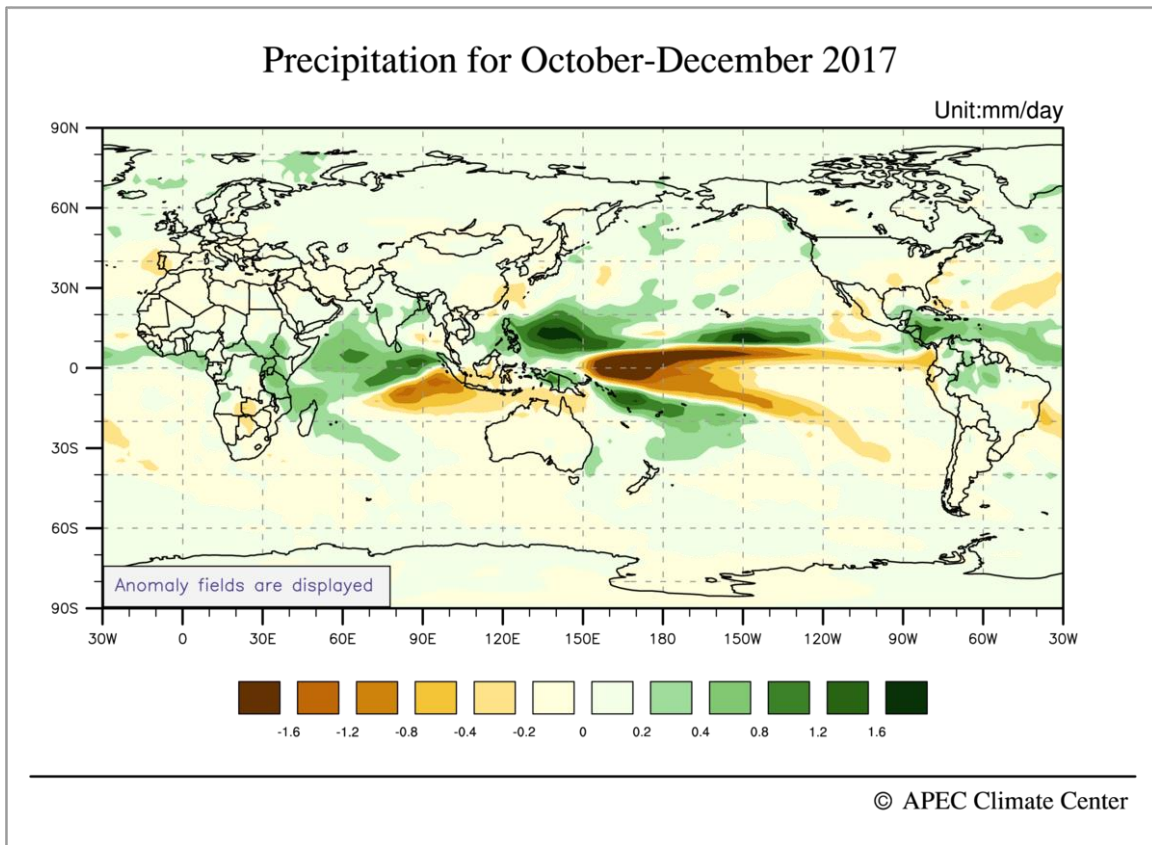


Fig. 8. Deterministic MME seasonal precipitation forecast for October – December 2017.

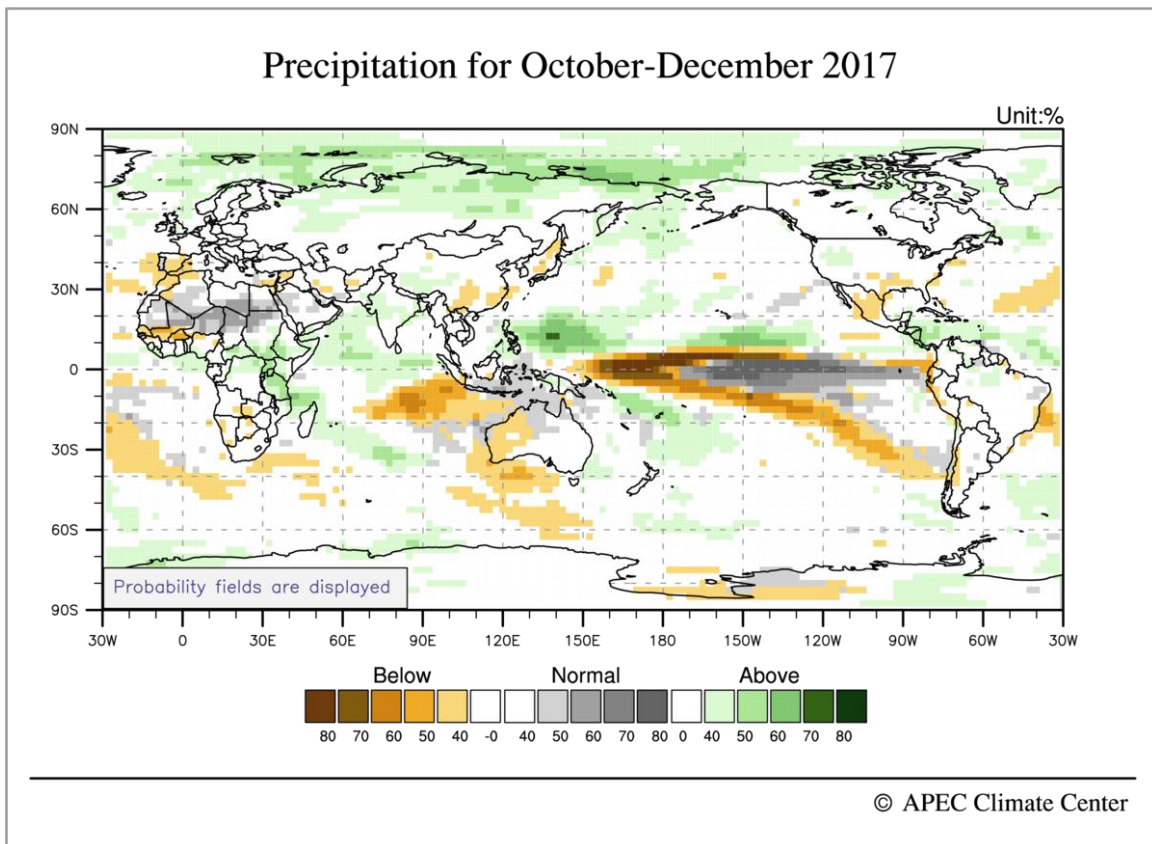


Fig. 9. Probabilistic MME seasonal precipitation forecast for October – December 2017.

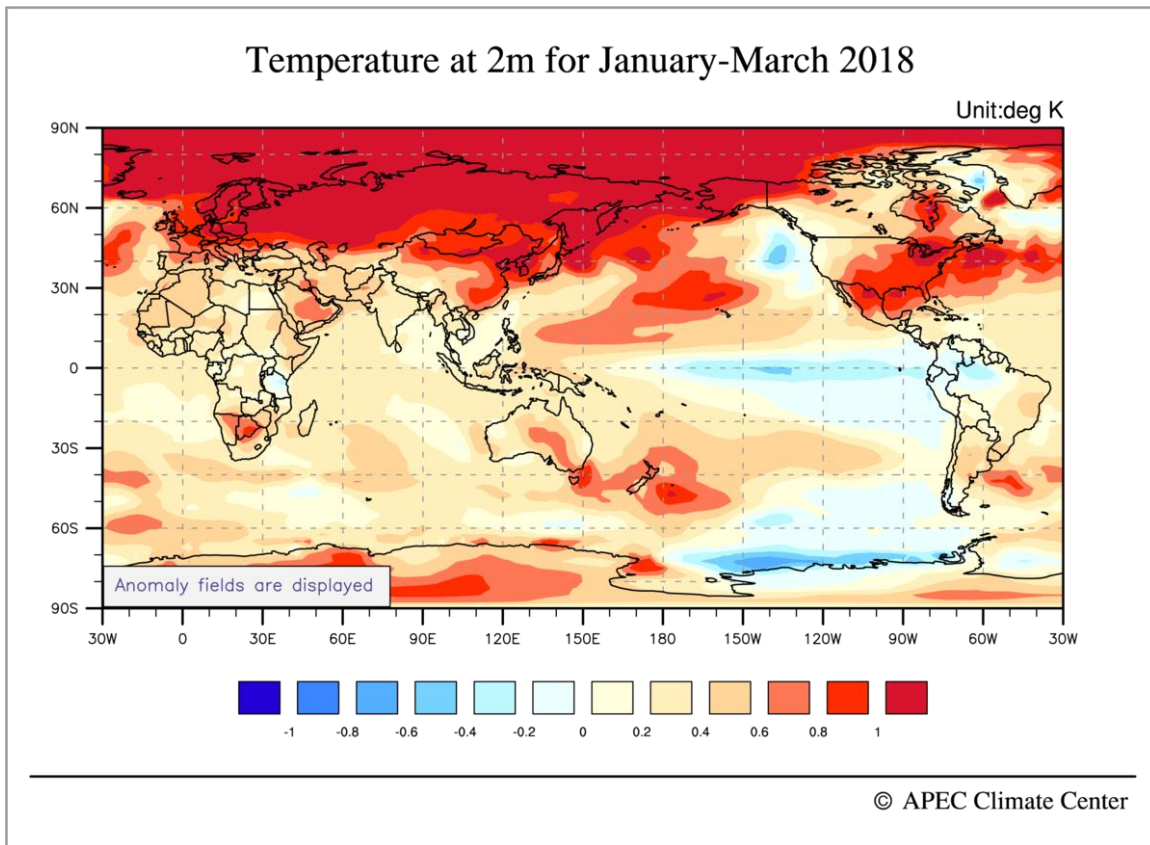


Fig. 10. Deterministic MME seasonal 2m temperature forecast January – March 2018.

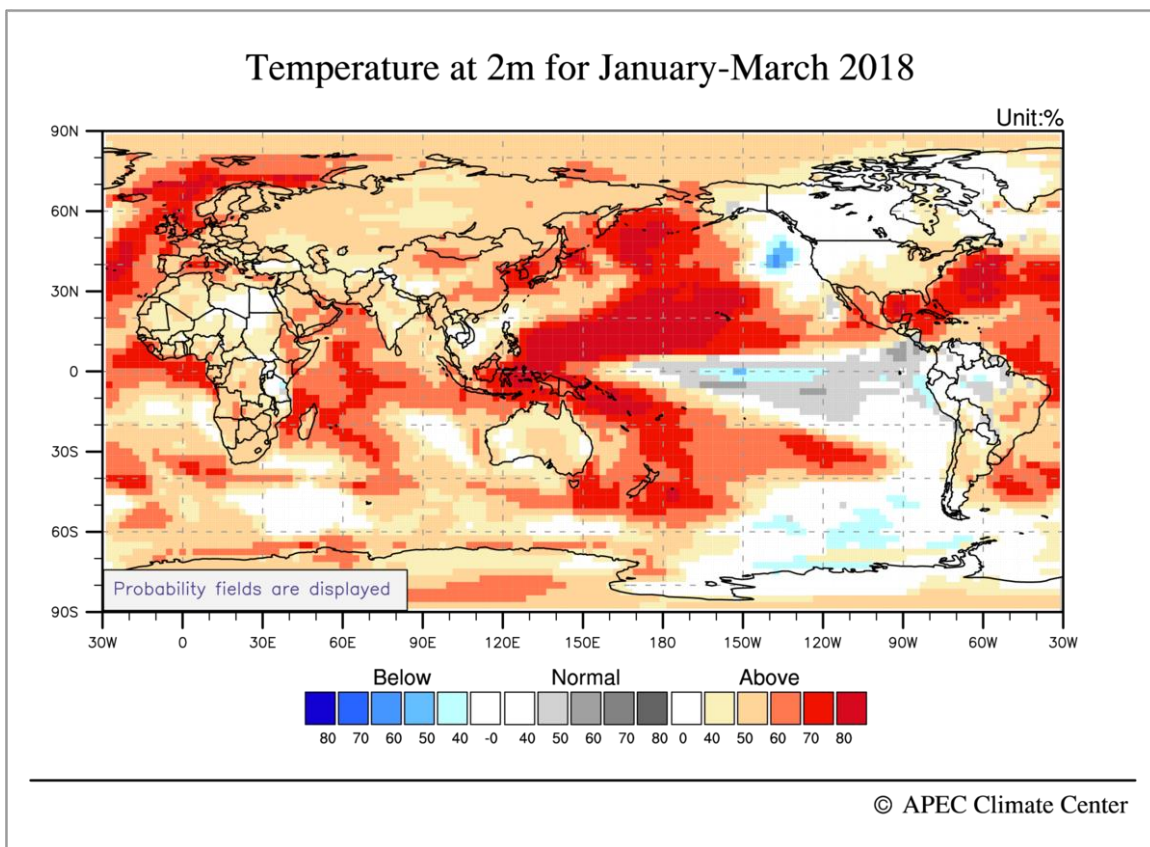


Fig. 11. Probabilistic MME seasonal 2m temperature forecast for January – March 2018.

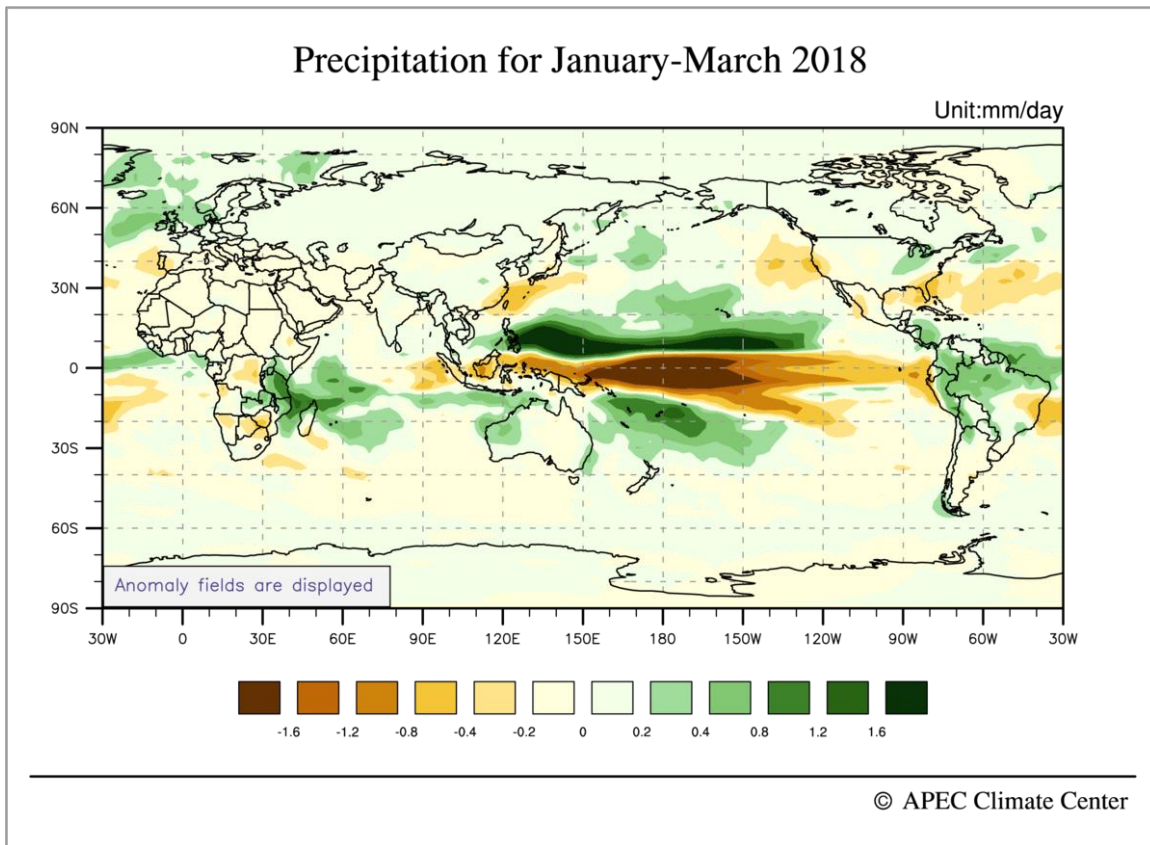


Fig. 12. Deterministic MME seasonal precipitation forecast for January – March 2018.

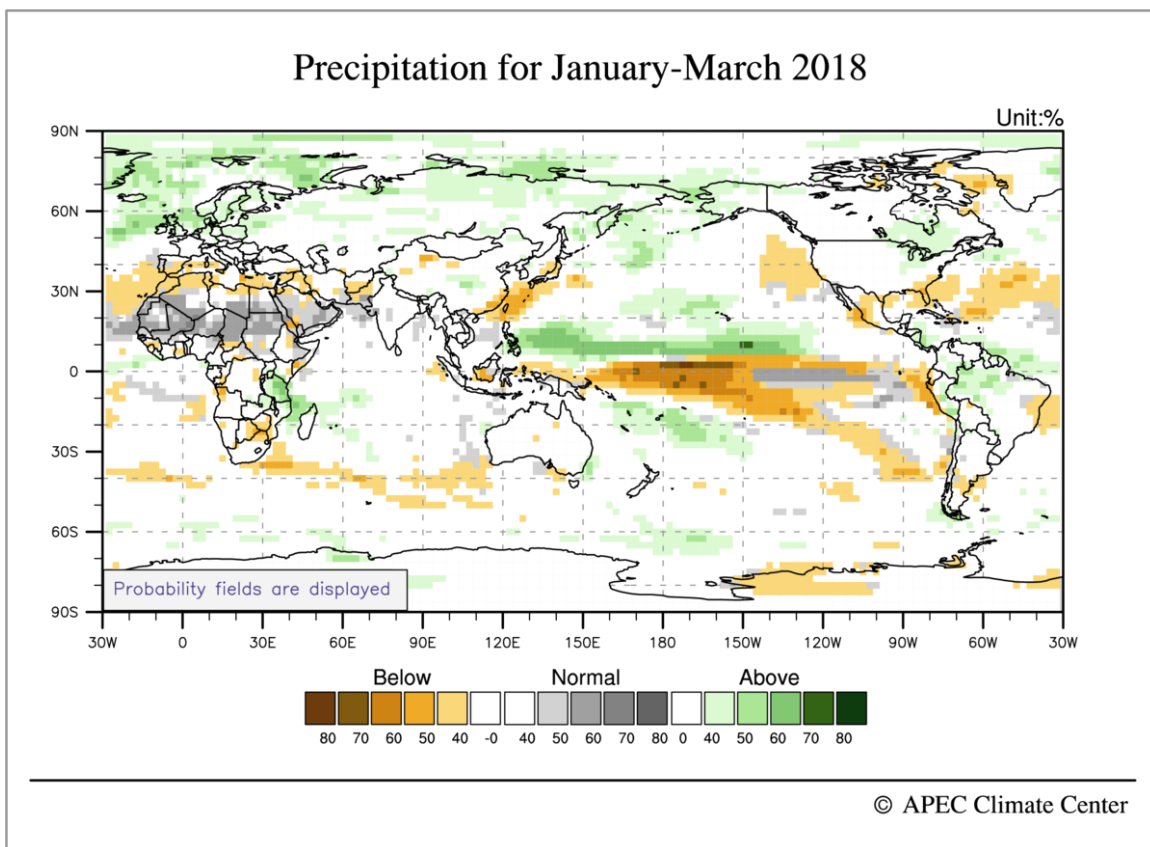


Fig. 13. Probabilistic MME seasonal precipitation forecast for January – March 2018.