EMS Annual Meeting Abstracts
Vol. 13, EMS2016-202, 2016
16th EMS / 11th ECAC

Predictability of the East Asian Winter Monsoon in APCC Multi-Model Ensemble Forecast System

Sun-Hee Shin
APEC Climate Center, Busan, Korea, Republic Of (ssh222@apcc21.org)

The variation of winter temperature over East Asia is closely related with the interanuual variation of East Asia Winter Monsoon (EAWM). And the variations of EAWM can exert large social and economic impacts on densely populated East Asia region and cause the potential occurrence of extreme disasters and severe flooding in Southeast Asian countries. The APEC Climate Center (APCC) provides an important source of information on seasonal climate prediction for many Asian counties that are affected by EAWM. Therefore, the author provides a comprehensive assessment of the prediction of EAWM by the seasonal prediction models participating in APCC multi-model ensemble (MME) seasonal forecast using the hindcast for 1983-2007, with a focus on interannual time scale. We firstly evaluated the performances of the existing 19 EAWM indices to find a suitable index in APCC seasonal forecast system. The selection criteria for EAWM index is given by following two points: first, the potential predictability of EAWM in climate models and second, representability of the wintertime surface air temperature anomalies associated with the EAWM. The selected index has not only high performance predicting the interannual variation of EAWM but also a very good performance describing the winter-mean surface air temperature variations over East Asia, especially for the extreme cold winters. Using the selected EAWM index, the author evaluates the predictability of EAWM and atmospheric circulation anomalies related with the EAWM.