ENSO as a regulator for the sub-seasonal prediction skill of surface maximum temperature over Yangtze River Basin in China

Tao Zhu (1,2) and Jing Yang (1,2)

(1) Key Laboratory of Environmental Change and Natural Disaster of Ministry of Education, Faculty of Geographical Science, Beijing Normal University, Beijing 100875, China. (201721480036@mail.bnu.edu.cn), (2) c. Academy of Disaster Reduction and Emergency Management, Ministry of Civil Affairs, Ministry of Education, Beijing Normal University, Beijing 100875, China. (201721480036@mail.bnu.edu.cn)

Based on sub-seasonal reforecast of the European Centre for Medium-range Weather Forecasts, this study identifies a significant linkage between ENSO and the sub-seasonal prediction skill (SPS) of daily maximum temperature (T_{max}) over Yangtze River Basin (YRB). The SPS of T_{max} exhibits much higher in El Niño decaying summer than La Niña decaying summer. The western North Pacific subtropical high (WNPSH) acts as a bridge to link ENSO and the SPS. WNPSH evidently extends westward and the 30-60-day tropical northward propagating signals become dominant over YRB in El Niño decaying summer, which corresponds to better local SPS of T_{max}. This study indicates the lower frequency intraseasonal signal could potentially increase the local sub-seasonal predictability.