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# Analysis on a teleconnection patterns between tropical ocean SSTs and extratropics by using a global downscaled precipitaton dataset

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High-resolution (near 100 km) global precipitation dataset (DA126), which is obtained by a dynamical global downscaling, is analyzed to examine a teleconnection pattern between tropical ocean sea surface Temperatures (SSTs) and extratropical circulation for the period of 1980-2010. It is found that a fine resolution of DA126 precipitation data is able to reveal detailed structures of rainfall variability in the extratropics including East Asia in comparison with global analysis precipitation dataset often used in previous studies. The first EOF of precipitation of DA 126 precipitation over East Asia is related to the tropical Pacific SST (i.e. El Nino and Southern Oscillation) and the second EOF mode is associated with the Indian Ocean (IO) SST, indicating the TP and the IO SSTs have different associations with the East Asian Summer Monsoon rainfall variability. Our further analysis indicates that both the TP and the tropical IO warming acts to increase the rainfall anomaly over southern China after the mid-1990s, which results in a decadal shift of rainfall anomaly after the mid-1990s. In addition, the tropics-extratropics teleconnections, which are mainly associated with the TP and the IO, respectively, are different. The first EOF-related precipitation is associated with both the Pacific-Japan like pattern (or the East-Asia Pacific pattern) and the Eurasian-like pattern. In contrast, the second EOF-related precipitation is only associated with the PJ-like wave trains from the western Pacific to the East Asia.