

## **Influence of Tropical-Western and Extratropical Pacific SST on East Asian Climate**

Soo-Hyun Yoo, Chang-Hoi Ho, Hyung-Jin Choi  
School of Earth and Environmental Sciences  
Seoul National University, Seoul 151-742, Korea  
Email: Soo-Hyun.Yoo@noaa.gov  
Tel: 301-763-8000 x7544

Song Yang  
Climate Prediction Center, NCEP/NWS/NOAA  
Camp Springs, MD 20746  
Email: Song.Yang@noaa.gov  
Tel: 301-763-8000 x7012

In the summers of 1993 and 1994, East Asia was under the control by very different atmospheric circulation patterns. Many countries including China, Korea, and Japan suffered from extremely high temperatures and severe droughts in 1994 but experienced opposite climate anomalies in 1993. A careful examination of these climate features indicates that they do not resemble those associated with El Nino/Southern Oscillation, which usually exerts a moderate impact on the East Asian climate. However, different sea surface temperature (SST) anomalies have been found in the tropical and extratropical western Pacific Ocean in the spring and summer seasons between these two years.

A series of simulations using the atmospheric circulation model of Seoul National University have been carried out to understand the impact of these local SST anomalies (in the tropical and extratropical western Pacific) on the 1993-94 climate anomalies in East Asia. Results indicate that the SST anomalies in extratropical Pacific, which has a remarkable amplitude, can only explain some aspects of the climate signals. However, the SST anomalies in the tropical western Pacific can produce many features, similar to the observed, in the fields of surface temperature, precipitation, and atmospheric circulation. The importance of tropical western Pacific SST in influencing East Asian climate has been emphasized and the mechanisms responsible for this local SST and climate relationship have been put forward in this study.