

Evaluation of Regional Climate Model for Trends of Extreme Indices over East Asia

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We examined temporal and spatial structure of trends in precipitation-based and temperature-based extreme indices simulated by the Regional Model Program of Global/Regional Integrated Model System (GRIMs-RMP). The extreme indices were selected to consider the frequency, intensity, and persistence of extreme events. During the Last 30 years from 1979 to 2008, the model reasonably has simulated the temporal and spatial pattern of the trend. Although overestimation of minimum temperature and underestimation of maximum temperature occurred, the regional climate model captured observed direction and magnitude well in the indices based on temperature. The indices related to rainfall tended to be overestimated over East Asia except for Korea and Japan. However, the trend showed agreement with observation.

The results allow us to be optimistic about the RCM ability in the simulation of important extreme event of precipitation and surface temperature in East Asia. This type of study can also provide meaningful climate statistics and insight into climate change impact study.