

Simulated precipitation characteristics over the tropical Asian monsoon regions by high-resolution climate models

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Over the tropical Asian monsoon regions, precipitation amount varies on the various time-scales. To deeply understand the precipitation variations, precipitation characteristics, such as precipitation frequency, intensity, and extreme, are critical. Over the tropical regions, diurnal precipitation variations are also very essential. Also, these precipitation characteristics may change under global warming conditions. In numerical climate models, how are precipitation characteristics simulated well? This study examines the reproducibility of precipitation characteristics in the numerical climate models. We used CMIP6 (Coupled Model Intercomparison Project Phase 6) climate models, non-hydrostatic global and regional climate models. We evaluate the reproducibility in the simulated precipitation characteristics using the TRMM(Tropical Rainfall Measuring Mission)-GPM(Global Precipitation Measurement) related products. The simulated results by a regional climate model showed a large discrepancy between with and without cumulus parameterization if we use the same model increments. We will show additional results using the CMIP6 climate models.

Keywords: precipitation characteristics, Asian monsoon, seasonal difference