



Improvement of APHRODITE precipitation data over South Korea

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The APHRODITE (Asian Precipitation - Highly-Resolved Observational Data Integration Towards Evaluation of water resources) data has been widely used for the evaluation of the numerical model due to its higher spatial and temporal resolutions. However, some studies have indicated that it significantly underestimates the extreme precipitation values for several regions compared with station-based observation. In this study, therefore, the 25 year (1981-2005) APHRODITE precipitation data over South Korea was revised using Automated Synoptic Observing System (ASOS) data from Korea Meteorological Administration (KMA). After the spatial resolution and temporal interval of the ASOS data were changed to be same as those in the APHRODITE data, the GEV (Generalized Extreme Value) distribution for each data was calculated. After then, the GEV distribution of the APHRODITE data was corrected using the quantile mapping method. The corrected APHRODITE data was similar to the annual mean precipitation of the ASOS data. In particular, the annual mean precipitation over South Korea reasonably increased by $\sim 10\%$ and the extreme value of precipitation have significantly improved.

Acknowledgement

The research was supported by the Korea Meteorological Administration Research and Development program under grant KMIPA 2015-2083 and the National Research Foundation of Korea Grant funded by the Ministry of Science, ICT and Future Planning of Korea (NRF-2016M3C4A7952637) for its support and assistant in completion of the study.