



Development and Evaluation of Drought Monitoring based on Satellite Rainfall Estimation for Un-gaged Basins

Kyungwon Park (1), Sangmin Jang (2), and Sunkwon Yoon (3)

(1) APEC Climate Center, Busan, Korea, Republic Of (kwpark@apcc21.org), (2) APEC Climate Center, Busan, Korea, Republic Of (smjangk@apcc21.org), (3) APEC Climate Center, Busan, Korea, Republic Of (skyoonk@apcc21.org)

This study analyzed the applications of near real-time drought monitoring using satellite rainfall for the Korea peninsula and un-gaged basins. We used AWS data of Yongdam-Dam, Hoengseong-Dam in Korea area, the meteorological station of Nakhon Rachasima, Pak chong for test-bed to evaluate the validation and the opportunity for un-gaged basins. In addition, we calculated EDI(Effective drought index) using the stations and co-located PERSIANN-CDR, TRMM(Tropical Rainfall Measurement Mission) TMPA(The TRMM Multisatellite Precipitation Analysis), GPM IMERG(the integrated Multi-satellitE Retrievals for GPM) rainfall data and compared the EDI-based station data with satellite data for applications of drought monitoring. The results showed that the correlation coefficient and the determination coefficient were 0.830 and 0.914 in Yongdam-dam, and 0.689 and 0.835 in Hoengseong-Dam respectively. Also, the correlation coefficient were 0.830, 0.914 from TRMM TMPA datasets and compasion with 0.660, 0.660 based on PERSIANN-CDR and TRMM data in Nakhon and Pak chong station. Our results were confirmed possibility of near real-time drought monitoring using EDI with daily satellite rainfall for un-gaged basins