Geophysical Research Abstracts
Vol. 20, EGU2018-3444-1, 2018
EGU General Assembly 2018

Determination of water supply quantity considering climate change scenarios

Eun-Sung Chung (1), Soo Hyun Kim (1), and Hoon Lee (2)

(1) Seoul National University of Science and Technology, Seoul, Republic of Korea (eschung@seoultech.ac.kr), (2) Shinhan University, Geonggi-do, Republic of Korea (hlee@shinhan.ac.kr)

This study aims to determine the water supply quantity for the instreamflow requirement considering climate change scenarios. However, the quantity can be variable according to the selection of climate change scenarios. Therefore this study proposed a robust framework to find the best quantity which is not the best but relatively good in most climate change scenarios. This study used RCP4.5 and RCP8.5 which were released from Korea Meteorological Administration and the instreamflow requirement which is defined as the minimum flowrate for maintaining various functions of the stream was set by the Ministry of Land, Infrastructure, and Transport of Korea in 2015. The streamflow was simulated using SWAT model after calibration and validation. The number of days to satisfy the instreamflow requirement was calculated for each year and climate change scenario by every water quantity scenario. Then the marginal number of days to each incremental quantity was compared and the quantity showing the largest marginal number can be selected for each scenario. In the end, the robust quantity from many climate change scenarios was determined using minimax regret approach.