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Forecasting about variations of hydro-meteorological variables in the future using SVAT model and RCP scenarios

Daeun Kim¹ Kiyoung Kim¹ and Minha Choi²¹Hanyang University, Korea²Sungkyunkwan University, Korea

Climate change is one of the urgent problems in various fields such as politics, economy, society, and culture, which is what we have to conquer. The climate change also have influenced on water resources which was closely related with human life. Especially, the water management is mightily significant issue for maintenance of connection with climate system, human society and environment. Thus, the forecasting of climate change effect in water resources is important to prepare the various risks of it. For the forecasting about variations of hydro-meteorological variables in the future, the Soil-Vegetation-Atmospheric Transfers (SVAT) models have been widely used because of its accuracy. Among them, the Common Land Model (CLM) is advanced SVAT model that often utilized to estimate hydro-meteorological variables in water resources. In addition, the Representative Concentration Pathway (RCP) scenarios that were introduced by Intergovernmental Panel on Climate Change (IPCC) were employed to research the future variations. In this study, we identified the variations of major energy fluxes such as net radiation, sensible heat flux, and latent heat flux in the past and future in East Asia. The energy fluxes were estimated using CLM and historical data, RCP 4.5 and RCP 8.5 scenarios which were selected to represent the differences between each scenario. The estimated energy fluxes were analyzed according to climatic regions which were classified by Köppen and Geiger. The results using CLM and RCP scenarios were compared with in-situ data and each other's and were showed time series of estimated energy fluxes according to climatic regions.

Biography

Daeun Kim has completed her PhD in 2016 from Hanyang University and Post-doctoral studies from Sungkyunkwan University. Her Director is Dr. Minha Choi in graduated school of water resources.

daeunkim@skku.edu

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