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Improving techniques for watershed water cycle to adapt climate change and variation

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Since South Korea is heavily populated and has very small land area, the country is more reliant on territorial resources, such as land and water, than other countries. Therefore, Korea faces a greater possibility of serious water resource problems caused by even small climate changes. To address the issue of restricted water resource caused by climate change, a system that predicts and evaluates climate change and the hydrologic cycle at local scales should be established. In addition, for establishing a long-term national water resource plan, predicting and evaluating the influence of climate change on water resources is very important. The aim of this study is to understand the changes in hydrological components such as runoff and evapotranspiration caused by future climate change using the CAT (Catchment hydrologic cycle Assessment Tool), which is a hydrological model developed by the KICT (Korea Institute of Civil engineering and building Technology) (Kim et al., 2012), and to provide a method to better manage climate change by evaluating water cycle improvement facilities in areas that require improvement. The water cycle improvement facilities were considered in this study, and these structures positively affect the water cycle as they enable retention (by absorbing rainwater), and reduce the impervious area (by securing green areas), while decreasing runoff. The CAT model used in this study provide a tool for evaluating the impact of such water cycle improvement facilities.

Biography

Cheolhee Jang is currently working at Korea Institute of Civil Engineering and Building Technology, Korea. Cheolhee Jang research interests are Oceans and Climate Change, hydrologic & water cycle etc.

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