Impacts of climate change on water resources in Huaihe River basin, China

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Climate change has been becoming an utmost important environmental issue, which will challenge the existing water resources management practice in many ways. Huaihe River is one of the major rivers in China, which undergoes frequently flood and drought hazards in each decade. For the purpose of assessing the implication of climate change on water resources in Huaihe River basin, the VIC model with resolution of 0.25°×0.25° was calibrated with 16 well gauged sub-catchments. According to the similarity in climate conditions, soil texture, etc, model parameters were transferred to other poorly gauged areas. Taking runoff in period of 1961~1990 as baseline, the impact of climate change on runoff under the four scenario of A1, A2, B1, and A1B was studied with the established VIC model. Although the modeled annual runoff in the next 50 years would probably increase 5~10%, the situation of regional floods and severe shortage in water resources during the dry season would possibly be exacerbated under the global warming.