Geophysical Research Abstracts
Vol. 18, EGU2016-5844, 2016
EGU General Assembly 2016

Development of applicating probabilistic long-term forecasts into water management

Jin Hwang (1), Kyongsik Ryoo (2), and Aesook Suh (3)

(1) Korea Water Resources Corporation, Korea, Republic Of (jhwang@partner.kwater.or.kr), (2) Korea Water Resources Corporation, Korea, Republic Of (ariel.jin.hwang@gmail.com), (3) Korea Water Resources Corporation, Korea, Republic Of (shorty1231@naver.com)

This research shows development of applicating probabilistic long-term forecasts into water management. Forecasted Cumulative Distribution Functions (CDFs) of monthly precipitation are plotted by combining the range of monthly precipitation based on proper Probability Density Function (PDF) in past data with probabilistic forecasts in each category. Ensembles of inflow are estimated by entering generated ensembles of precipitation based on the CDFs into the 'abcd' water budget model. The bias and RMSE between averages in past data and observed inflow are compared to them in forecasted ensembles. In our results, the bias and RMSE of average precipitation in the forecasted ensemble are bigger than in past data, whereas the average inflow in the forecasted ensemble is smaller than in past data. This result could be used for reference data to apply long-term forecasts to water management, because of the limit in the number of forecasted data for verification and differences between the Andong-dam basin and the forecasted regions.
This research has significance by suggesting a method of applying probabilistic information in climate variables from long-term forecasts to water management in Korea. Original data of a climate model, which produces long-term probabilistic forecasts should be verified directly as input data of a water budget model in the future, so that a more scientific response in water management against uncertainty of climate change could be reached.