

Comparison and analysis of monthly runoff predicted by four different techniques in a rainfall–runoff forecasting system (RRFS)

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Abstract A rainfall–runoff forecasting system (RRFS) was developed as a toolkit for quantitative and qualitative analysis and prediction of a basin-wide rainfall–runoff relationship. The main technique to predict the long-term runoff of more than one month is the ensemble streamflow prediction (ESP) technique, which is currently integrated as a module in the RRFS. In order to improve the accuracy of runoff predicted by the pre-existing ESP technique, the weather outlook provided by the Korea Meteorological Agency (KMA) was added to that module. The verification of monthly runoff predicted by both techniques was performed for the 12-month period January–December 2007. Predicted monthly runoff values were compared with those from two other methods: mean monthly runoff measured during the 24-year period 1983–2006, and numerical precipitation data provided by the KMA.

Key words monthly runoff prediction; water resources management; Geum River basin; ESP