

Combined Rainfall-Runoff Forecast System based on the TOPMODEL for Han River basin

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Combined rainfall-runoff forecast system has been established by using the TOPmodel coupled with the Sacramento routing scheme for the Han River basin (Fig.1). This system is composed of both the AF (AWS-Flow) and CAF (Coupled Atmosphere-Flow) forecast system. The AF forecast system, based on the lag from the rainfall to the streamflow at its outlet, uses the AWS rainfall as the pre-input, and the CAF system is coupled with the SRAPS's (Short Range Analysis and Prediction System based on the MM5) forecasted precipitation.

We have performed the 28 forecast experiments at 6-hr interval from 03 LT 1 August 2002 by running the AF, CAF, and the control (CTRL) system forced by the observed inputs: streamflow, AWS rainfall, and dam control data. The simulated results indicate that there is not nearly difference between the AF and CAF forecasted streamflow within the 6-hr forecast lead time, but after this time the CAF gives the better results than that of AF (Fig. 2).

Although the AF does not give the better prediction for the streamflow than that of CAF, AF may give the more recently updated forecast results (CAF: 6-hr interval, AF: 1-hr interval run). Therefore, the real-time Han River Combined Rainfall-Runoff Forecast System including the AF (within the first 6-hr effective) and CAF system (the 7 - 24 hr forecast lead time effective) is being operated in METRI/KMA

(<http://iris.metri.re.kr/~khchang/rrf/g/>).

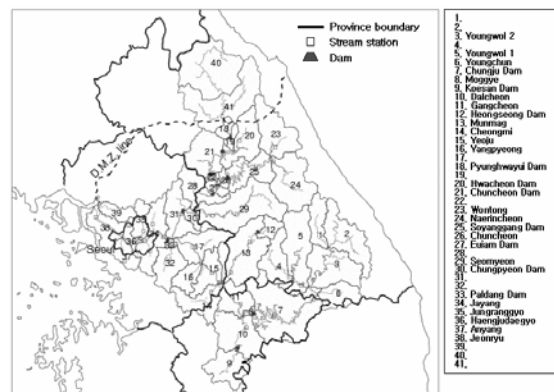


Fig. 1. Han River basin including 41 sub-basins used in the combined rainfall-runoff forecast system.

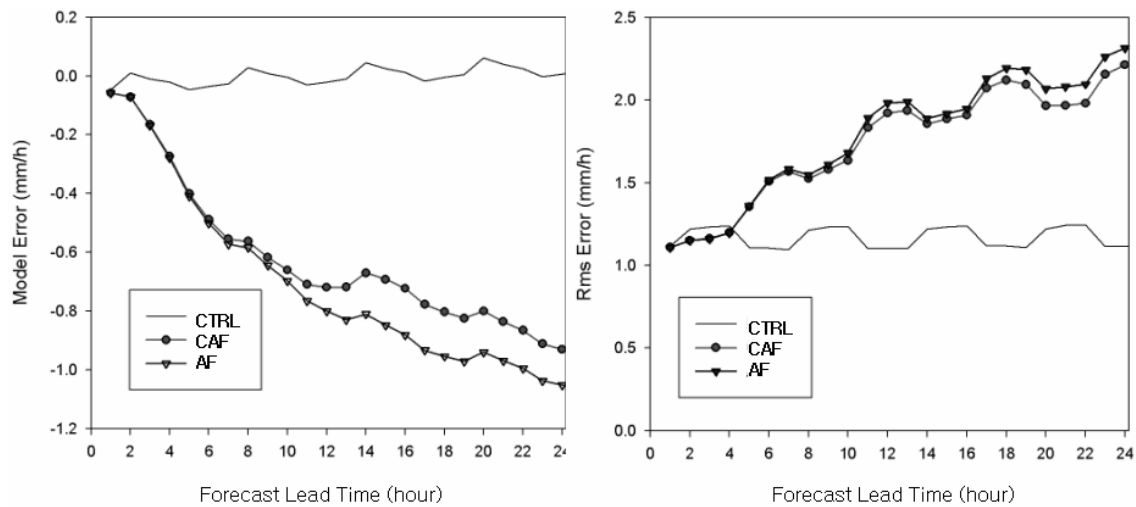


Fig. 2. The performance comparison for the prediction of basin- and forecast-averaged streamflow.

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References

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