USING CLIMATE INFORMATION FOR THE EXTENDED STREAMFLOW PREDICTION IN KOREA

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The forecasting skill for meteorological variables continues to improve due to better understanding of the climatic system and particularly of ENSO phenomenon. An ongoing concern is the use of meteorological forecast information to hydrologic forecast. This research investigates climate forecast information available for improving extended streamflow prediction in Korea. Such information includes the climate forecasts provided by (1) MIMIM (Monthly Industrial Meteorology Information Magazine), (2) GDAPS (Global Data Assimilation Prediction System), and (3) NCEP (National Centers for Environmental Prediction). In addition, we propose methodologies that can employ the climate information for the extended streamflow prediction. The hit ratio is used to assess the accuracy of MIMIM: both 1-month and 10-day ahead temperature forecasts of MIMIM are superior to the naïve forecast.

The MIMIM forecast is applied to monthly inflow forecasts at the Chungju multipurpose dam in Korea. Although the average hit score of all scenario cases for the verification period (1991~2002) was better than that of the selected scenario cases, the latter was superior to the former for the wet season.

This study is currently assessing the accuracy of GDAPS and NCEP forecasts for the Korea peninsula, and those forecasted ensembles will be applied to the rainfall-runoff model to generate a streamflow forecast ensemble.

Table 1. AHS for the all and the selected scenarios for 1991~2002

Month / Scenarios	1	2	3	4	5	6	7	8	9	10	11	12	Average
All	**0.294**	**0.244**	**0.541**	**0.333**	0.518	0.307	**0.364**	0.335	0.423	**0.453**	0.551	0.505	**0.402**
Selected	0.289	0.179	0.269	0.302	**0.645**	**0.374**	0.224	**0.431**	**0.424**	0.262	**0.667**	**0.602**	**0.386**