



Development of an optimal hydrologic data assimilation model to improve flood forecasts

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A hydrologic data assimilation model was developed to improve flood forecasts using a multi-site calibration method and a multi-Muskingum method. The multi-Muskingum channel routing technique was used to overcome the computation time limit for semi-real time flood forecasts. The multi-site calibration method was used to resolve the uncertainty issue of rainfall-runoff behavior in the large watershed application of a distributed hydrologic model. The developed model was applied to the Seoul area which is located in the Han River basin, Korea. Results demonstrated that the performance of a developed rainfall-runoff model adopting an optimal hydrologic data assimilation model reveals the dramatic reduction of the computation time and the reasonable accuracy in flood forecasts by applying the optimal hydrologic data assimilation model.

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