Updating of linear reservoir models for urban runoff

N. S. V. Lund, J. W. Pedersen

DTU Environmental Engineering, Technical University of Denmark

A linear reservoir model has been made to imitate the rainfall-runoff relationship for the Ballerup catchment due to a need for better predictions of the flow in urban drainage systems. In order to make flow predictions it is important to keep the model up to date by continuously assimilating data into the model, which is done by using two different statistical methods, respectively Maximum A Posteriori estimation and the Ensemble Kalman Filter. Hereby flow predictions are made ½-4 hours into the future during a total time period of four months and are evaluated by using the Nash Sutcliffe Efficiency.