

DEVELOPMENT OF A FRAMEWORK OF AUTOMATED WATER QUALITY PARAMETER ESTIMATION

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This paper presents a methodology and framework for the development of an automated optimization tool for calibrating water quality parameters in QUAL2E. The method has been applied to estimate the optimal water quality parameters in simulation of stream water quality for the Anyang stream in Korea. A computer program, QUAL2E_OPT, including both a GRG algorithm and a genetic algorithm has been developed to find to get the possible global solutions. The results showed that the parameter estimates on a reach-by-reach basis with a GRG algorithm was the most effective with the smallest SSE value. According to the simulation results, the automated approach was computationally efficient for evaluation of model parameters and converges on a best fit more rapidly and reliably than a trial and error method.