



## **Groundwater contamination risk assessment considering parameter uncertainty**

Xuan Li, Guoli Wang, Guohua Liang, and Bin He

Institute of Water Resources and Flood Control, Dalian University of Technology, Dalian, China  
(lixuan1992@mail.dlut.edu.cn)

Hydrogeological parameters uncertainty is a major source of error in groundwater modeling. It is essential to analyze the effects of stochastic parameters uncertainty on predicting hydraulic heads and contaminant concentration. In this paper, a series of numerical experiments were performed based on a groundwater numerical simulation to discuss the influence of parameters uncertainty on the prediction results. Hydrogeological parameters with high sensitivity are identified by using local sensitivity analysis and taken as random parameters. In order to analyze parameters uncertainty, the Markov chain Monte Carlo method is used to select the groups of parameters which converge to the Bayesian posterior distribution. Then, the simulation results come out under different groups of parameters which can show the distribution of hydraulic heads and contaminant concentration, and the groundwater pollution risk at every point. It can provide reference to groundwater resources evaluation and groundwater pollution control.