

---

## Study on Simulation Method of Groundwater Flow in Varying Flow Fields

Hisashi IMAI

---

Recent human activities require more effective technologies for the numerical simulation of groundwater flow. For such requirements, groundwater simulation methods were studied to address several current issues, such as the expansion of range of applied hydraulic conductivity, long-term evaluation of hydrogeological features related to the disposal of high level radioactive waste from nuclear power generations and so forth. In this study, the following four items were studied to increase the availability of groundwater simulation to the recent requirements. 1) Methodology of boundary condition setting. 2) Measurements of unsaturated seepage parameters for rocks. 3) Estimation method of ground settlements using the results of groundwater flow simulation. 4) Simulation method to adapt to the evolution of hydrogeological environments in the course of several million years. These studies enable us to estimate groundwater behaviors and the characteristics of hydrogeological environments in order to address recent hydrogeological concerns.