Quantitative evaluation of deep groundwater flow by newly introduced segmentalization approach.

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http://unit.aist.go.jp/georesenv/gwrg/

Recently, a lot of studies have been undertaken to evaluate activity of deep groundwater flow system. Because deep aquifer is considered as the system with specific environment, such as very low permeability etc. And many ideas are proposed to utilize this specific environment. One of the ideas is utilization of the environment as storage of carbon dioxide or radioactive waste.

Groundwater modeling technique is used on the evaluation of deep groundwater flow system. However due to insufficient data of the system, uncertainty still remains and improvement of accuracy on groundwater modeling analysis is the important issue.

Kanto plain is the largest alluvial plain in Japan and it consists of several aquifer systems with high productivity of groundwater. A lot of study have been undertaken mainly to manage groundwater system of this plain. Therefore these studies are not focused on the evaluation of deep groundwater system because main objectives of the studies are to understand mechanism of land subsidence which had been caused by the groundwater development in several hundreds meters aquifers. Then environment of deep groundwater systems of this plain is still not clear and many studies have been introduced to understand the system clearly than before.

In this presentation, segmentalization approach is proposed to evaluate environment of deep aquifer in Kanto plain. On the analysis, large aquifer system of the plain is divided into several aquifer systems and groundwater system is evaluated on each aquifer system using different indicator and different modeling technique.