

V&V approach for the groundwater analysis

Hiroyuki Tosaka², *Tomonari Shiraishi¹

1.SHIMIZU CORPORATION, 2.The Univ. of Tokyo

In recent years, V&V (Verification and Validation) which supports the quality guarantee of numerical simulation is remarkably examined in a wide range of simulation fields, in addition to the quality guarantee in the ISO9001 series. There was not so much attention paid to V&V in view of groundwater flow analysis in the past. In the field of safety evaluation which is necessary for radioactive waste disposal, however, JSCE (Japan Society of Civil Engineers) has showed a series of procedures from creating numerical models to V&V for the purpose of groundwater flow analysis. In the related researches, there is a challenge which is using one of chemical characteristics for the prediction V&V of the age of groundwater, as well as traditional data like water level, pressure, and flow rate. There are also several researches about the evaluation method of heterogeneity and uncertainty. On the other hand, the basic law on the water cycle was enacted in 2014. It is estimated in the future that the necessity of groundwater flow analyses with V&V would rise up for the design and safety evaluation of underground facilities. In JAGH (Japanese Association of Groundwater Hydrology), a research group named as "the problem finding of V&V approach for groundwater analysis" started from 2015 in the investigation and research committee. The group is discussing which problems should be tackled for meeting social needs; collecting actual examples and experimental data for V&V of groundwater analysis code. In 2016, the group is planning to publish a book collecting code-verification samples and to give seminars concerning V&V.

Keywords: Groundwater flow analysis, Verification, Validation

ASME V&V10のフロー図と課題抽出にあたっての区分け

