

# Underground Deposition of the Spent Nuclear Fuel — Numerical Simulation of Coupled Processes

Radim Blaheta<sup>1</sup>

<sup>1</sup>) Institute of Geonics, Czech Academy of Sciences, Ostrava  
radim.blaheta@ugn.cas.cz

The underground deposition of the spent nuclear fuel is a very challenging task from the engineering point of view with a big importance for the society. The solution of the problem requires lot of numerical modelling with the need of development of complex mathematical models for coupled processes and numerical methods for their solution. The coupled processes means thermo-hydro-mechanical (THM) processes on the first level, but there are even some successful attempts for coupling these THM processes with chemical and biochemical ones. The presentation outlines first the overall situation of the deep underground nuclear waste deposition and then provides deeper insight into modelling of hydro-mechanical and THM processes for the assessment of sealing constructions in nuclear waste repositories.

**Acknowledgement.** The work is supported by SURAO (Czech Radioactive Waste Repository Authority) through participation in the international project DECOVALEX (DEvelopment of COupled models and their VALidation against EXperiments).