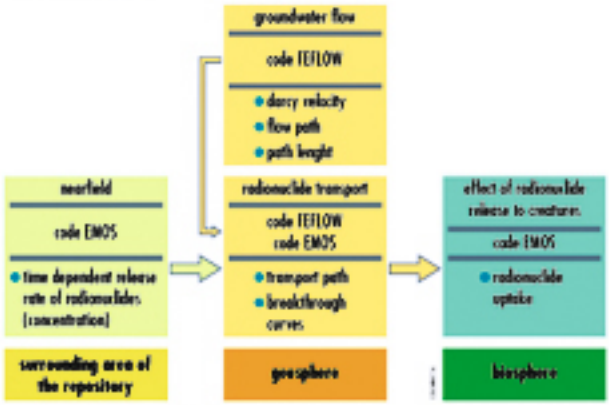
Hydrogeological Modelling of a Potential Repository Site in Crystalline Rock in Siberia

(C. Fahrenholz, W. Brewitz, E. Fein, M. Schöniger)

> Background and Objectives

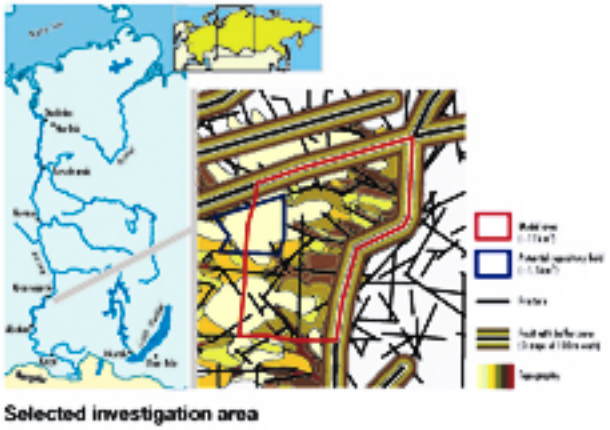
- siting of underground repository for high radioactive and heat-generating waste in deep hard rock formations in Siberia
- development of methodological approach for site investigation and site selection in hard rock formations



Network of different computer codes

> Selected Area

- investigation area is located in the Nizhnekanskii Massif in central Siberia
- investigation area is preselected by Russian scientists
- model area is defined by fractures and a water divide, as distant as possible from river systems and great fractures

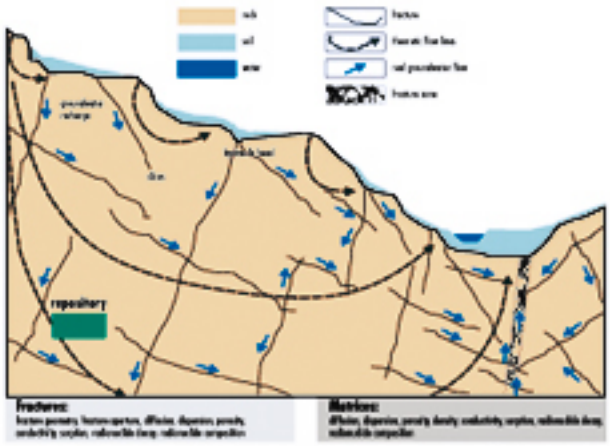


Selected investigation area

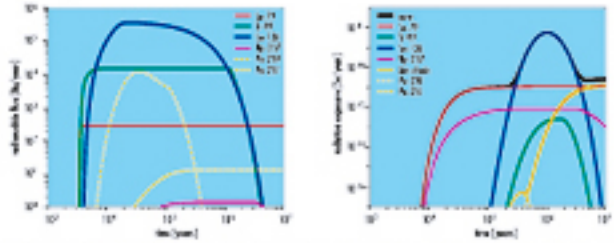
> Hydrogeology

Hydrogeological layers

> Modelling



Model parameters



Radionuclide flux [Bq/y] in the near field as well as the radiation exposure [Sv/y] in the biosphere

> Preliminary Results

- path lengths through granite are determined via particle tracking
- possible statements about zones of upcoming groundwater
- the way through the matrix to the first fracture is most important for the isolation of nuclear waste
- the most important parameters are: the fracture geometry and aperture, the hydraulic conductivity of the matrix and the sorption capacities for the radionuclides

> Project Partners

- DBE Tec, Deutsche Gesellschaft für den Bau und Betrieb von Endlagern für Abfallstoffe, Peine
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- VNIPI PT Promtechnologii, Moscow
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Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH -
W. Brewitz, C. Fahrenholz, E. Fein, M. Schöniger
Theodor-Heuss-Straße 4, 38122 Braunschweig - Deutschland -
+49 (0)531-8012 239 / brw@grs.de
+49 (0)531-391-5616 / m.schoeniger@tu-bs.de