RepoTREND – An Advanced Modelling Tool for Performance Assessment of Radioactive Waste Repositories

T. Reiche

Processes to implement

- BioTREND: exposition in the biosphere
- GeoTREND: transport through the geosphere
- NaTREND: mobilisation and release of contaminants from the repository

Already implemented

- LOPOS (old Fortran code) modified for a new data exchange format (JSON)
- GeoTREND-SP (C++): contaminant transport through fully saturated porous media
- GeoTREND-FC (C++): contaminant transport in fractured media in the presence of colloids
- BioTREND (C++): framework for Monte-Carlo calculations (using SimLab 3.2)
- StatistControl (C++): framework for Monte-Carlo calculations

Next to implement
- NaTREND: processes in the Near field of a repository in rock salt considering two phase flow (replacing LOPOS)
- GeoTREND-F: contaminant transport in fractured porous media
- GeoTREND-C: contaminant transport in porous media in the presence of colloids
- ClayTREND: contaminant transport through a Clay barrier

Details to RepoTREND
- C++, Object Oriented design
- Parallel computing: cluster computing of Monte-Carlo simulations and multithreading design of algorithms

Acknowledgement
This work was funded by the Federal Ministry of Economics and Technology of Germany under grant No. FKZ 02 E 10367