

DynaFrax

Experts in Dynamics of Rock Fracture Systems and GeoCoupled Process Simulation and Analysis of GeoHazard and Risk

Founded in 2018 as a spin-off of the Helmholtz Centre GFZ Potsdam, we provide unique solutions to dynamic problems related to subsurface rock fracture systems as a result of complex THMC coupled processes.

UNTERSTÜTZT DURCH DEN IMPULS- UND VERNETZUNGSFONDS VON
HELMHOLTZ

Fields of expertise

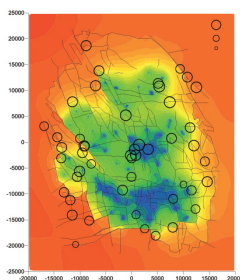
- Fluid injection induced seismicity modelling
- Fault rupture/slip modelling
- Underground excavation stability analysis
- Rock stress analysis & modelling
- Nuclear waste repository safety analysis
- THMC coupled process modelling
- Solute (radionuclide) transport modelling
- Geohazard and risk assessment

Our partners worldwide

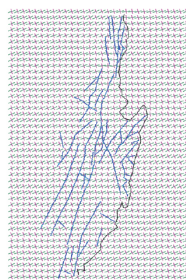


Projects

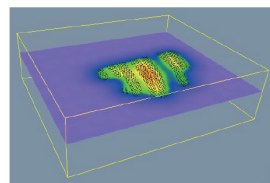
- Thermally induced rock fracture slip
- Reservoir depletion and gas injection induced seismic hazard assessment
- Long-term thermal evolution of nuclear waste repository
- Long-term concrete degradation of engineered barrier system
- Earthquake simulation and forecasting
- Earthquake-induced stress field change and hydrogeology condition



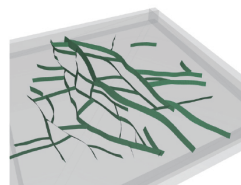
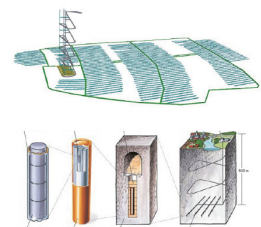
2D Hydro-mechanical coupled modelling of long-term pressure depletion and depletion-induced seismicity, and modelling of gas injection for pressure maintenance and for mitigation of depletion-induced seismicity in the Groningen gas reservoir in the Netherlands



2D regional scale geomechanical modelling study for the south-east Korea
 - Local stress field analysis
 - Groundwater level analysis
 - Fault activation analysis
 - Earthquake occurrence prediction



3D Thermo-mechanical coupled modelling of long-term distribution of rock temperature increase and thermally induced rock fracture slip in the underground repository for final disposal of spent nuclear fuel in Forsmark Sweden



3D local scale geomechanical modelling study of complex fault system
 - Fault instability analysis
 - Fluid injection/withdrawal induced seismicity modelling
 - Optimization of fluid injection for mitigation of seismicity/fault instability