Examples of computational 3D modeling at the German Federal Institute for Geosciences and Natural Resources

Stephan Steuer,
Dorothee Rebscher, Marco Wolf, Björn Zehner, Alireza Hassanzadegan, Falk Lindenmaier, Matthias Beushausen
3D modeling at the Federal Institute for Geosciences and Natural Resources (BGR)

Overview
3D modeling at the Federal Institute for Geosciences and Natural Resources (BGR)

Location of the models
3D modeling at the Federal Institute for Geosciences and Natural Resources (BGR)

Model parameters:
- 81.725 km²
- 16 horizons
- 2,631 faults
- 170 salt structures
- 48 % of final model

TUNB (Subsurface potentials for storage and economic use in the North German Basin)
Volume models

Lithology models of the central German North Sea and a geothermal site in Lower Saxony
3D modeling at the Federal Institute for Geosciences and Natural Resources (BGR)

Visualisation of volume models with uncertainty
3D modeling at the Federal Institute for Geosciences and Natural Resources (BGR)

Numeric modeling

Simulation of a hydraulic fracture (THM)

Groundwater flow simulation
3D modeling at the Federal Institute for Geosciences and Natural Resources (BGR)

Modelling of a repository for radioactive waste
3D modeling at the Federal Institute for Geosciences and Natural Resources (BGR)

Thank you for your attention

3D-Modell of the BGR headquarter in Minecraft