



Numerical Simulation of Permeability-Changes by Dissolution and Precipitation in Geothermal Reservoirs

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The performance of a geothermal plant is controlled by the permeability of the geothermal reservoir. Hydrothermal systems often consist of porous sand- or limestone with high salt contents. Most important minerals in this context are halite and calcite. During the operation of the geothermal plant the circulating fluid changes locally the chemical equilibrium which leads to changes of the permeability by dissolution and precipitation processes.

To investigate these processes we have set up a numerical code on the basis of the *oops!* - library, which is developed and maintained at LIAG for the solution of mathematical models of coupled thermal, hydraulic and chemical processes.

We present first numerical studies of the dissolution, transport and precipitation of halite and calcite.