1056-86-1135   **Isabel Ostermann*** (`osterma@mathematik.uni-kl.de`), Geomathematics Group, PO Box 3049, 67653 Kaiserslautern, Germany. *Modeling of Geothermal Flow.* Preliminary report.

Geothermal power is sustainable since the heat extraction is small compared to the Earth's heat content. Nevertheless, there are risks like local depletion especially when using deep geothermal reservoirs. Thus, amongst others, methods to predict the heat transport are needed. We develop a three-dimensional model to simulate geothermal flow in a two-phase porous medium representing the geothermal reservoir which is based on the transient advection-diffusion-equation. (Received September 21, 2009)