TOWARD FULLY SELF-CONSISTENT MODELLING OF AVERAGE CONTINENTAL GROUNDWATERS

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The forward modelling of average continental groundwaters appears to be a relatively simple task. However, the spatial and large lateral extent of the continental crust, the convective heat transport by a convective fluid, and the internal structure of the earth, suggest that the problem is not as straightforward as it might appear. The problem is essentially a coupled fluid flow and heat transfer problem, where the flow is driven by the temperature gradient. The goal of the work is to develop a self-consistent model of the average continental groundwater system, which includes the convective heat transport and the flow of water in the earth.

1. The flow is driven by the temperature gradient, which is caused by the boundary conditions specified at the surface of the earth.
2. The temperature gradient is caused by the heat transport through the earth's interior.
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