Numerical Simulation of Plate and Mantle Movement

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Mantle convection is a key to understand the present and past status of the Earth. Current topics include a generation of plate-like behavior self-consistently and the dynamics of the Earth's deep interior. However, because of its enormous size and very long time-scale, the direct methods such as observational and/or traditional experimental methods are hardly applied for the mantle convection studies. Probably, the most useful and promising approach is a numerical simulation based on a sound physics and chemistry. Here, we discuss a possible development of such models using a high performance computer.