

## Numerical simulation of convection: viscoelastic effects on convection

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In the past, the interaction of mantle convection and plate motion is investigated, regarding mantle convection and plate motion as flows of incompressible viscous material. However, because actual plates are highly viscous material, they should have elastic nature, affecting on mantle's flow. (It is shown that plate motion with high viscosity and subduction of slabs control the flow pattern of mantle flow, resulting in plate-scale flow.)

In this study, we investigate the convection-pattern in view of (visco-)elastic properties of material. We first model the flow of viscoelastic materials, studying its feasibility. (A new constitution equation for numerical calculation is used) Then, we will compare the flow pattern of viscoelastic body with that of viscous fluid.