

Numerical modeling of the continental drift driven by the mantle convection

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Numerical simulation of mantle convection in a spherical shell is carried out in order to investigate the continental drift induced by the mantle flow. The high viscosity lids (HVLs), whose viscosity is ten times larger than the surrounding mantle and which can move with the averaged flow velocity within them, are put on the surface of the mantle. Each HVL moves the opposite direction by the flow caused by the thermal blanket effect. The time-scale of maintaining of the positions of the HVLs is shorter than that of re-aggregation of the HVLs. Our result suggests that the flow induced by the effect of the thermal-blanket of the continents is only effective on continental break-up and start of drift.