

Thought on the global tectonics of the Earth and Venus: From the view of mantle convection

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It is important for subduction to discuss the global tectonics of the Earth and Venus. Plate tectonics on the Earth still continue, however, that on the Venus have stopped due to global resurfacing before 5 Ga. The origin of resurfacing on the Venus is considered by episodic over turn of the whole planet[Turcotte,1993].

We have investigated the mantle convection with temperature, stress and yield stress dependent viscosity in a cylindrical polar shell.

This results in that three convective regimes are separated by evolving with time. Furthermore, we can see the episodic over turn considered by possibility of global resurfacing on the Venus.