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## **Modeling of magma systems in spreading ridges**

**E. Dubinin, Yu. Galushkin, A. Sveshnikov**

Lomonosov Moscow State University, Moscow, Russian Federation  
([evgeny-dubinin@rambler.ru](mailto:evgeny-dubinin@rambler.ru) / Fax: +7 495 9391594 / Phone: +7 495 9391510)

A non-steady thermal model of spreading with periodic axial intrusions allows an explanation of some specific features in formation of magma chambers in dependence on spreading geodynamics. The model considers the following main factors taking a part in the magma chamber formation in axial zones of MOR: periodic repetition of spreading episodes, high hydrothermal activity cooling of the axial crust, change in the mantle temperature and chemical composition of the axial oceanic crust, variations in depth and width of axial intrusions. The model suggests that the mantle temperature and spreading rate are the most importance parameters for in the magma system formation. The depth, shape and sizes of magma chambers and also axial relief and rheological behavior of the rocks differ significantly in the axial zones of the fast and slow spreading ridges. A differentiation of basaltic melt in the steady-state crust magma chambers of the fast spreading ridges determines a stratus structure of the crust. On the contrary, in the slow spreading ridges, the crust is characterized by nonregular, chaotic structure. The relief and crust structure in the axial zones of the slow MOR's, being subjected to influence of anomaly heated mantle (mantle plums) or migrating asthenosphere flows and therefore characterized by higher magma supply, can be close to the ones in the fast spreading ridges.

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