

THE EVOLUTION OF THE LITHOSPHERE OF PALEOSPREADING RIDGES

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The results of numerical modeling of spatially - temporary changes of the lithosphere thermal structure, bottom relief and anomalous geophysical fields of dying spreading ridges at different stages of their evolution are presented. There are three main stages of paleosspreading ridges development. First - the active stage is connected to slowing of spreading velocity down to the complete discontinuance of the spreading. Morphotectonics and deep structure of a rift zone of fast spreading ridges at this stage essentially depend on the evolution of the crustal magmatic chamber, responsible for concrete eruptions in a tectonomagmatic cycle. The less velocity of aspreading is, the less expressed axial magmatic chamber, the sharper contrast of the axial zone relief and the thicker brittle layer of lithosphere are. The second stage is characterized by tension of the lithosphere, but without formation of new crust. Third - the passive stage of evolution is characterized by cessation of tensile stresses and presumes alteration of thermal field in the lithosphere and dipping of the asthenosphere roof in the vicinity of paleosspreading ridge. The specificity of each stage and the features of lithosphere evolution of dying of slowly and rapidly spreading ridges are illustrated by examples of Labrador ridge and Mathematicians ridge, accordingly. It is shown, that at the dying of spreading ridge the serpentinization process of mantle peridotites can play an essential role and substantially influence bottom relief, gravity anomalies and deep structure of paleosspreading ridges.