

## Evolution of the dipole geomagnetic field. Observations and models

Reshetnyak M., Pavlov V.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

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### Abstract

© 2016, Pleiades Publishing, Ltd. The works on paleomagnetic observations of the dipole geomagnetic field, its variations, and reversals in the last 3.5 billion years have been reviewed. It was noted that characteristic field variations are related to the evolution of the convection processes in the liquid core due to the effect of magnetic convection and solid core growth. Works on the geochemistry and energy budget of the Earth's core, the effect of the solid core on convection and the generation of the magnetic field, dynamo models are also considered. We consider how core growth affects the magnetic dipole generation and variations, as well as the possibility of magnetic field generation up to the appearance of the solid core. We also pay attention to the fact that not only the magnetic field but also its configuration and time variations, which are caused by the convection evolution in the core on geological timescales, are important factors for the biosphere.

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