

Spherical dynamos with precession

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Abstract:

The earth's magnetic field has particular characteristics such as the reversals of the magnetic dipole moment or its self-maintenance in time. It has been shown that the equations of rotating and diffusive magnetohydrodynamics in spherical geometry reproduce these characteristics effectively, there is not complete agreement on the factor that forces the system to this situation. In the present work, using direct numerical simulation, we show that the latter features can be satisfactorily reproduced considering only the forcing granted by the precession in the rotation of the earth.

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