

Report on Some Preliminary Attempts to Improve the on the Realism of Geodynamo Simulations

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During the past decade, numerical simulations of the geodynamo have been published increasingly often. The character of the magnetic fields so created have generally been in encouraging agreement with what is known about the real magnetic field of the Earth. But there is a mystery: the agreement has been unreasonably good, bearing in mind the drastic simplifications that necessarily had to be made by the simulators. In particular, all simulations so far have seriously underestimated the effect of the Earth=s rotation on the dynamics of the core, in its effect both on the numerically resolved scales of motion and on the unresolved scales. Results of preliminary attempts to eliminate this difficulty will be reported.

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