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Scaling properties of numerical dynamos

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The success of numerical models of the geodynamo raises two questions: (1) are they physically correct despite their non-realistic parameters ? (2) can they be applied to other planetary systems ? The investigation of scaling properties in these models is one step towards the answers. We present results from a systematic parameter study and theoretical elements to establish scaling relationships for the magnetic field strength, the velocity amplitude, and the length scales in numerical rotating convection and dynamo models. Comparison with previous experimental and numerical studies show the robustness of the scalings. Some geophysical implications for the history of the Earth are then discussed.