

# **Saturn's axisymmetric field: A low $R_m$ nonlinear analysis**

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Saturn's magnetic field is remarkably axisymmetric. Stevenson (1982) suggested that differential rotation in a stable layer above the dynamo region might explain this strong axisymmetry. Stevenson's model was linear, but we have extended his Cartesian plane layer model to include the additional flows driven by the magnetic field. These include a geostrophic flow that arises due to Taylor's constraint.

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