

Rotating Taylor Green Dynamos

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We investigate dynamo action for Taylor-Green flows in the presence of rotation. The investigation includes asymptotic results in the high rotation limit and a large set of numerical simulations covering a range of Reynolds numbers from 10 to 1000 and Rossby numbers from 0.05 to 10. Different behaviors are observed depending on the location of the run in the Re - Ro parameter plane. Some of observed behaviors can be explained by small Rossby limit expansions. We focus on the scaling of the dissipation rates and saturation amplitude of the magnetic field on the control parameters of the system.