Abstract Submitted
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Non-axisymmetric Instabilites in Thick Magnetised Tori Around Black Holes[1] TYLER LANDIS, PETER DIENER, ERIK SCHNETTER, Department of Physics & Astronomy, LSU, BURKHARD ZINK, Theoretische Astrophysik, Eberhard-Karls-Universität Tübingen — Accretion onto black holes is one of the most likely candidates for generating many high energy events observed in our universe, which include gamma ray bursts, active galactic nuclei, and X-ray binaries. With current computing power, we are now beginning to be able to model some of these potential sources in global three dimensional general relativistic magnetohydrodynamic (GRMHD) simulations. This gives us the ability to study the nonlinear asymmetric dynamics of these systems. Here, I will present recent results studying the growth of non-axisymetric instabilities in several thick accretion tori models initially in equilibrium around a black hole on a fixed spacetime background focusing on the effects of the presence of a toroidal magnetic field.

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