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Magnetized Stars in General Relativity¹ ERIC HIRSCHMANN,

Brigham Young University, JARED GREENWALD, Baylor University — While magnetic fields are ubiquitous features of stellar systems, it is only relatively recently that the evolution of compact objects such as neutron stars have been simulated using both general relativity and ideal magnetohydrodynamics. An important aspect of these simulations is beginning with physically reasonable initial data. To this end, we consider the problem of constructing equilibrium configurations of axisymmetric, polytropic stars with strong magnetic fields in general relativity.

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