

Abstract Submitted
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Astrophysical constraints on the parameter space of the neutron-star equation of state¹ BENJAMIN LACKEY, JOCELYN READ, University of Wisconsin-Milwaukee, BENJAMIN OWEN, Penn State, JOHN FRIEDMAN, University of Wisconsin-Milwaukee — The neutron-star equation of state is largely unknown above nuclear density but can be accurately parameterized by only 4 free parameters. The parameter space may be constrained with observations of neutron stars, and we find the constraint surfaces associated with causality and with observed limits on masses, radii, redshift, moment of inertia, and spin frequency. There are only a few hard (model-independent) constraints; of these, the most stringent is associated with the largest observed neutron-star masses, and this constraint only restricts the parameter space to one side of a constraint surface. Anticipated future observations of moments of inertia of stars with known masses can more sharply constrain the parameter space, confining the parameter space to a surface.

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