Faithful Representations of Causal Barotropic Neutron Star Equations of State LEE LINDBLOM, Univ of California - San Diego — Parameterized representations of the neutron-star equation of state are used in efforts to measure the properties of the high density matter in those stars using astronomical observations. New representations are presented here that are capable of representing any equation of state to any desired level of accuracy, and that impose causality and thermodynamic stability constraints automatically on those equations of state. Numerical tests are presented that measure how well these new parameterizations represent a collection of published theoretical neutron-star equations of state.

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