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Isospin Asymmetry in Nuclei and Neutron Stars ANDREW STEINER, Los Alamos National Laboratory — The role of isospin asymmetry in neutron stars and nuclei is investigated. We discuss the causes of correlations among the neutron skin thickness in heavy nuclei, the pressure of neutron-rich matter near saturation density, the derivative of the nuclear symmetry energy at the same density and the radii of moderate mass neutron stars. The impact of symmetry energy constraints for the mass and moment of inertia contained within neutron star crusts and the threshold density for the nucleon direct Urca process, all of which are potentially measurable, is explored. We comment on the minimum neutron star radius, assuming that only nucleonic matter exists within the star. We discuss these results in the light of recent mass and radius measurements which have the potential to offer tighter constraints on the theory.

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