

Abstract Submitted
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Microscopic Calculations of Neutron Matter, Symmetry Energy and Neutron Stars STEFANO GANDOLFI, Los Alamos Natl Lab — Recent advances in experiments of the symmetry energy of nuclear matter and in neutron star observations yield important new insights on the equation of state of neutron matter at nuclear densities. In this regime the EOS of neutron matter plays a critical role in determining the mass-radius relationship for neutron stars. We show how microscopic calculations of neutron matter, based on realistic two- and three-nucleon forces, make clear predictions for the relation between the isospin-asymmetry energy of nuclear matter and its density dependence, and the maximum mass and radius for a neutron star. On the other hand, we show that important information on the equation of state can be extracted from neutron star observations.

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