

Abstract Submitted
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Microscopic approach to isospin-asymmetric nuclear matter: recent progress and applications.¹ FRANCESCA SAMMARRUCA, PLAMEN KRASSTEV, University of Idaho — We will present and discuss a variety of recent results from our on-going investigation of effective interactions in dense, isospin-asymmetric hadronic environment within the Dirac-Brueckner-Hartree-Fock framework. These include microscopic isospin-dependent in-medium nucleon-nucleon cross sections, a crucial information for predicting the nucleon mean free path in nuclear matter and thus nuclear transparency. Two-body in-medium cross sections are also useful for transport model simulations of heavy-ion collisions, with asymmetry considerations being especially of interest at this time due to the possibility to study collisions of neutron-rich nuclei at RIA energies. Our work in progress extends to neutron star properties and spin polarized neutron matter.

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