

Abstract Submitted  
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**Properties of trapped neutrons interacting with realistic nuclear Hamiltonians**<sup>1</sup> PIETER MARIS, JAMES VARY, Iowa State University — Neutron drops can provide useful microscopic input to a universal nuclear energy density functional. We have computed the ground state energy of neutrons trapped in harmonic wells of different strength and compare results from different Hamiltonians, including realistic two-body interactions as well as different three-body forces. In addition to the total energy of the system, we also compute the internal energies and radii. Excitation energies for different spin states provides information about spin-orbit splittings. These results can be used as a benchmark for different many-body techniques, test different nuclear interactions far from stability, and to constrain properties of nuclear energy-density functionals.

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