Abstract Submitted
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A Microscopic Approach to Neutron-Rich Matter[1] LARZ WHITE, FRANCESCA SAMMARRUCA, Univ of Idaho — Our group is concerned with the properties of the nuclear force in the medium, particularly in the presence of unequal densities of protons and neutrons. The approach we take is "ab initio," in the sense that realistic nucleon-nucleon forces are used as the input of many-body calculations, without phenomenological contributions. Intense computation is an essential element in microscopic nuclear physics. Our most recent effort consists of the solution of a large number of coupled integral equations describing scattering of nucleons in nuclear matter. Our solution method does not rely on partial-wave decomposition of the scattering amplitude and removes the need for standard approximations typically applied when including the Pauli blocking mechanism.

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