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Three Neutrons in a Finite Volume

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We present an implementation of the three-neutron quantization condition (QC) derived in previous work. We construct the QC computationally and numerically determine the solutions. The symmetry of the QC means that it can be projected onto representations of the appropriate little group (depending on frame momentum \vec{P}), restricting the size of the matrices and reducing computational complexity. Two-neutron interactions are modelled using experimental data for scattering amplitudes. We obtain results for the volume-dependent energy shifts for the case of three neutrons in a finite energy range.

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