

Abstract Submitted
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Infrared Extrapolations of Electromagnetic Multipole Moments and Transitions¹ DANIEL ODELL, Univ of Tennessee, Knoxville, THOMAS PAPANBROCK, LUCAS PLATTER , Univ of Tennessee, Knoxville and ORNL — Basis truncations introduce systematic errors in observables calculated by representing the nuclear Hamiltonian in finite Hilbert spaces. Recent studies of the infrared convergence of finite basis calculations of energies and radii have led to accurate descriptions of numerical data. I will discuss how these concepts can be applied to the study of bound-state quadrupole moments and transitions as well as multipole transitions between bound-states and the continuum. I will show that good agreement is obtained between analytically derived and numerically computed convergence behavior in finite harmonic oscillator spaces for the nucleon-nucleon system. This opens the way to a more precise understanding of structure and reactions involving heavier nuclei.

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