

Abstract Submitted
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Ab initio no core results for light nuclei with a Woods-Saxon basis¹ GIANINA ALINA NEGOITA², JAMES VARY, PETER MARIS, Iowa State University, ANDREY SHIROKOV³, Moscow State University — We perform no-core (NCF) calculations for a set of light nuclei with the realistic NN interaction, JISP16. We perform our calculations both in a harmonic oscillator and Woods-Saxon basis and compare convergence rates for the ground state energies, energies of selected excited states, rms radii and other observables. Initial results for the binding energies and rms radii of ^4He and ^{12}C will be presented. The differences in the convergence rates of these results with increasing basis space size reflects the infra-red properties of the basis states. We will discuss factorization of the center-of-mass motion and show how insuring factorization affects the results in the Woods-Saxon basis spaces.

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