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Ab initio no core results for light nuclei with realistic basis functions[1] JAMES VARY, ALINA NEGOITA, PIETER MARIS, Iowa State University, ANDREY SHIROKOV, Skobeltsyn Institute of Nuclear Physics, Moscow State University, Russia — We perform no-core (NCFC) calculations for a set of light nuclei with realistic NN interactions. 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. The results for rms radii of light and weakly bound nuclei present useful tests of more realistic basis spaces such as the Woods-Saxon basis. 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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