

Abstract Submitted
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A-dependence of the Spectra of the F Isotopes from ab initio Calculations¹ BRUCE R. BARRETT, Univ of Arizona, ERDAL DIKMEN, Suleyman Demirel U, PIETER MARIS, JAMES P. VARY, Iowa State U, ANDREY M. SHIROKOV, Iowa State U, Lomonosov Moscow State U, Pacific National U — Using a succession of Okubo-Lee-Suzuki transformations within the No Core Shell Model (NCSM) formalism [1], we derive an ab initio, non-perturbative procedure for calculating the input for standard shell-model (SSM) calculations within one major shell. We have used this approach for calculating the spectra of the F isotopes from $A=18$ to $A=25$, so as to study the A -dependence of the results. In particular, we are interested in seeing if the theoretical input is weak enough, so that a single set of two-body effective interactions can be used for all of the F isotopes investigated. We will present results from SSM calculations based on input obtained with the JISP16 nucleon-nucleon interaction in an initial $4\hbar\Omega$ NCSM basis space. 1. E. Dikmen et al., Phys. Rev. C 91, 064301 (2015).

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