

# A PSDPF interaction to describe intruder negative parity states in sd shell nuclei

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In the level scheme of sd shell nuclei, there is generally at relatively low excitation energies, coexistence of 'normal' positive parity states and of 'intruder' negative parity states. The aim of our work is to describe these intruder states in the full p-sd-pf model space with a  $4\text{He}$  core and allowing for one nucleon jump between the major shells. To construct our PSDPF interaction, we first modified the p-sd and sd-pf cross-monopole terms and then applied a fitting procedure to adjust all PSDPF parameters by comparing an extended set of experimental and calculated level energies. Results obtained with the new interaction will be compared with experimental data for nuclei throughout the sd shell.

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