

Structure of the odd-odd $62,64\text{Co}$ nuclei: “is there evidence of the onset of particle-hole intruder states in these nuclei?”

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Following the identification of the deformed particle-hole intruder states in 67Co by Pauwels et al., and the subsequent identification of a second low-energy $1+$ level in adjacent odd-odd 66Co , along with other isomeric levels, the question arose, “how can the structure of 66Co be compared with the evolution of the structure of the lighter odd-odd Co isotopes?” Stated another way, are there features of the lighter odd-odd Co isotopes that show evidence of the onset of the deformed intruder levels? In this presentation, data from β decay of neutron-rich 61 - 67Mn isotopes, selectively ionized at ISOLDE at CERN, are combined with data from deep inelastic reactions of a 64Ni beam with a 238U target at the ATLAS facility at Argonne National Laboratory to identify the $1+$ levels and higher-spin levels in $62,64\text{Co}$ to which the “intruder” and “spherical structures” in 66Co can be compared.

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