

Spectroscopy and shell model study of Medium-High Spin States in $^{91,92}\text{Zr}$

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Abstract. Identification of near-yrast states in the stable $^{91,92}\text{Zr}$ isotopes has been carried out using the fusion evaporation reaction $^{82}\text{Se}(^{13}\text{C},\text{xn})^{95-x}\text{Zr}$ at an incident beam energy of 50 MeV using the Yale ESTU tandem accelerator [1] together with the SASSYER array [2]. Gamma-ray spectroscopy of states above the reported $\tau = 6 \mu\text{s}$, $I^\pi = 21/2^+$ isomer in ^{91}Zr [3,4] are reported for the first time along with proposed configurations resulting from evaluation of the new experimental data and new shell model calculations. The calculations were carried out in the $\pi(1f_{5/2}), \pi(2p_{1/2}), \pi(1g_{9/2}), \nu(2d_{5/2}), \nu(1g_{7/2}), \nu(1h_{11/2})$, model space with a newly derived Hamiltonian [5] using the code Oxbash [6].

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