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

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Abstract. Identification of near-yrast states in the stable $^{91,92}$Zr isotopes has been carried out
using the fusion evaporation reaction $^{82}$Se($^{13}$C,xn)$^{95-96}$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 $\tau = 6 \mu$s, $I^\pi=11/2^+$ 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].

REFERENCES