

Commissioning the fast timing array (FATIMA) at FAIR- 0: Lifetimes of excited states in the N=50 isotones ^{96}Pd and ^{94}Ru

mercredi 1 février 2023 15:05 (20 minutes)

This abstract reports results of the first experiment of the DESPEC Phase-0 campaign at GSI, which focused on the study of neutron-deficient nuclei approaching ^{100}Sn . These data provide the first extended commissioning experiment for the DESPEC collaboration within NuSTAR. We present results on electromagnetic transition rates associated with the decays from excited states populated following the formation of $\pi=8+$ proton 'seniority-isomer' states in the N=50 isotones ^{94}Ru and ^{96}Pd . Direct half-life measurements via gamma-gamma coincidences using the FATIMA detector array consisting of 36 $\text{LaBr}_3(\text{Ce})$ scintillators have determined the reduced matrix elements associated with decays between low-lying states in these semi-magic nuclei. The extracted half-lives for yrast spin/parity $6+$ and $4+$ states in ^{96}Pd and the $6+$ state in ^{94}Ru are consistent with the published, highest-precision values for these nuclei.

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Classification de Session: Session 11: Results from DESPEC, CARIBU and JYFL