

Abstract Submitted
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High-Statistics β^+ /EC-Decay Study of ^{122}Xe ¹ BADAMSAMBUU JIGMEDDORJ, University of Guelph, S1292 COLLABORATION — The Xe isotopes are centrally located in the $Z > 50$, $N < 82$ region that displays an extraordinarily smooth evolution of simple collective signatures. However, the collectivity of excited states in this region is very poorly characterized. There are spectroscopic hints to unusual structures in this region. The 0_3^+ states in $^{124-132}\text{Xe}$ are very strongly populated in ($^3\text{He}, n$) reactions, suggesting a pairing vibrational structure influenced by proton subshell gaps, perhaps leading to shape-coexistence that could give rise to strong $E0$ transitions. Recent work on ^{124}Xe has established nearly identical quadrupole collectivity for the pairing vibrational 0_3^+ band and the ground state band. However, in ^{122}Xe , the 0_3^+ state has not been firmly identified. A high-statistics ^{122}Cs β^+ /EC decay experiment to obtain detailed spectroscopic data for low-spin states was performed at the TRIUMF-ISAC facility using the 8π γ -ray spectrometer and its auxiliary detectors including PACES, an array of five Si(Li) detectors, for conversion electron spectroscopy. The decay scheme has been considerably extended through a γ - γ coincidence analysis, and 0^+ states have been identified via γ - γ angular correlations.

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