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Shape coexistence and mixing behind the isomers of ^{94}Pd

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The heaviest nuclei around the $N = Z$ line offer new insights into the coexistence phenomena and the fundamental symmetries. These exotic nuclei are of particular interest due to the open questions concerning the nature of the observed isomers, the irregularities in the excitation spectra, and their feeding by the β decay of the neighboring nuclei. We investigated the evolution of shape coexistence and mixing in the structure of ^{94}Pd positive parity states and the nature of the isomeric states at spin 8^+ and 14^+ within the beyond-mean-field *complex* Excited Vampir model using an effective interaction derived from a nuclear matter G matrix based on the charge-dependent Bonn CD potential in a large model space. Within the same theoretical framework we studied the Gamow-Teller β decay of the 7^+ isomer and the superallowed Fermi β decay of the 0^+ ground state of ^{94}Ag to ^{94}Pd . Results on the structure and electromagnetic properties of positive parity states up to spin 14^+ in ^{94}Pd as well as the strength distributions for the ^{94}Ag β decay feeding the investigated states in ^{94}Pd will be discussed and compared with the available experimental data [1].

[1] A. S. Mare and A. Petrovici, Phys. Rev. C **106**, 054306 (2022)

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