

Nuclear Structure and Possible E0 transitions in ^{179}Au

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Very neutron-deficient isotopes were studied by means of in-beam gamma-ray spectroscopy, beta-decay spectroscopy, alpha-decay spectroscopy and isomeric-decay spectroscopy. The experiments were performed at ISOLDE and at cyclotron laboratory of the University of Jyväskylä. Unprecedented rotational bands, based on $1h_{11/2}$ proton-hole configurations, coupled with intruder 0^+ states in even-even Hg cores, were identified in $^{177,179}\text{Au}$. Their band-heads de-excite with transitions that might have significant E0 components, although they were not unambiguously identified. In addition to that, in ^{179}Au , two coexisting $9/2^-$ states connected with transition with possible E0 component were identified. They are based on coupling of $1h_{9/2}$ proton-intruder configurations with two 0^+ states in the ^{180}Hg core.

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