

## Nuclear structure and possible E0 transitions in $^{179}\text{Au}$

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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  $^{179}\text{Au}$ , 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  $^{180}\text{Hg}$  core.

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