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Isomeric decays of N ˜ Z nuclei in the vicinity of 100Sn

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(On behalf of the EURICA collaboration)

The structure of nuclei in the vicinity of doubly magic ^{100}Sn offer insight to the interplay between the seniority scheme in closed-shell nuclei and isoscalar proton-neutron interactions which are prevalent in $N \sim Z$ nuclei. Below ^{100}Sn, information on the excited states of $N \sim Z$ nuclei is accessible by isomeric decays and β-delayed γ-ray spectroscopy with limited production rates.

A decay spectroscopy experiment was performed at the RI Beam Factory of RIKEN Nishina Center. A 345-MeV/u ^{124}Xe beam was fragmented on a ^{9}Be target, producing record quantities of ^{100}Sn and other proton-rich isotopes in its vicinity. Ion implantation and β decays were measured with the Wide-range Active Silicon-Strip Stopper Array for Beta and ion detection (WAS3ABi), and γ rays were measured with the EUroball-RIKEN Cluster Array (EURICA).

Half-lives and transition strengths of many γ-decaying isomeric states were measured. New isomeric decay information was obtained in ^{92}Rh, ^{96}Ag and ^{98}Cd, consistent with shell-model calculations. As one of the highlights of the experiment, the low-spin structure ^{96}Cd was revealed for the first time.

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