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High-Resolution β- - γ Study of the 110Tc – 110Ru – 110Rh – 110Pd Isobaric Decay Chain

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Neutron-rich nuclei close to mass A=100 display a variety of intriguing shape phenomena such as exotic triaxial shapes, shape changes and shape coexistence. Recent investigations exploiting Coulomb excitation have helped to shed light on these phenomena [1]. However, as more intense radioactive beams of these refractory isotopes become available it has become evident that some of the key nuclear structure information required to fully analyse this data is lacking.

Consequently, in conjunction with new Coulomb-excitation investigations, dedicated decay studies were performed in this mass region. For these studies a cocktail beam of radioactive A=110 ions from ANL's CARIBU source were implanted onto a gold foil and gamma decays were registered with the Gamma-Ray Energy Tracking In-Beam Nuclear Array (GRETINA) [2]. The analysis of this data will yield new information, refining the level scheme and determining angular correlation and mixing ratios in these exotic isotopes for the first time. This new information is vital for the extraction of nuclear matrix elements and deformation parameters in the Coulomb-excitation analysis. In this talk preliminary results will be presented on the discrete-line gamma-ray coincidence analysis associated with the β-decay feeding of states in 110Ru from 110Tc and subsequent decays along the isobaric chain and these compared with the existing literature on this sequence [3,4].
[1] D. Doherty et al., Phys. Lett. B, 776, 334 (2017).
[2] S. Paschalis et al., Nucl. Instrum. Methods A, 709, 44 (2013)
[3] J.C. Wang et al., Phys. Rev. . C61, 044308 (2000).
[4] J. Aysto et al., Nuclear Physics , A515, 365-380 (1990).

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