## Non-yrast structure of neutron-rich Zr nuclei

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Neutron-rich zirconium (Z=40) nuclei lie in the midst of a shape-changing region with many models predicting a transition from spherical to prolate/oblate coexistence at N~60. Measurements of the mean-square charge radii in the zirconium chain [Ca02] indicate a shape transition at N=59. In order to further investigate the low-lying structure of more-exotic systems, an experiment was undertaken at the GSI facility to study 104,106Zr populated following the beta decay of 104,106Y produced in the projectile fission of a 750 MeV.A 238U beam. The beam impinged on a Be target and the recoiling fission fragments were analysed, separated and slowed in the GSI FRagment Separator and stopped in an array of position-sensitive silicon detectors. Gamma rays emitted following the beta decay of the yttrium ions were measured using the RISING array in its stopped-beam configuration and correlated with the implanted ions. Details of the measurements on the exotic zirconium nuclei will be presented and discussed along with future plans to measure more-exotic systems.

[Ca02] P.Campbell et al., Phys. Rev. Letts. 89 (2002) 082501.

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