Contribution ID: **111** Type: **Oral**

Investigation of γ-softness: Lifetime measurements in ^{104,106}Ru

Friday, 21 July 2023 14:20 (15 minutes)

Lifetimes of the 2_1^+, 4_1^+, 6_1^+, 2_γ^+ and 3_γ^+ states in ^{104,106}Ru were measured using the recoil-distance Doppler shift technique and the Cologne Plunger device [1]. Low-lying excited states in both nuclei were populated in a ^{104}Ru(^{18}O, ^{18}O\textquotesingle)^{104}Ru* inelastic scattering and in a ^{104}Ru(^{18}O, ^{16}O)^{106}Ru two-neutron transfer reaction at the Cologne FN Tandem accelerator. The experimental energy levels and deduced electromagnetic transition probabilities are discussed in the context of γ-softness and the mapped interacting-boson model with input from the microscopic self-consistent mean-field calculation using a Gogny interaction [2]. The newly obtained results for the γ band, give a more detailed insight about the triaxial behavior of ^{104,106}Ru. The results will be discussed in the context of γ soft and rigid triaxial behavior which is present in the neutron-rich Ru isotopes [3].

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Session Classification: Session 16

Track Classification: Experimental Nuclear Structure