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

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Lifetimes of the 2_1^+ , 4_1^+ , 6_1^+ , 2_γ^+ and 3_γ^+ states in $^{104,106}\text{Ru}$ 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 $^{104}\text{Ru}(^{18}\text{O}, ^{18}\text{O})^{104}\text{Ru}^*$ inelastic scattering and in a $^{104}\text{Ru}(^{18}\text{O}, ^{16}\text{O})^{106}\text{Ru}$ 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 $^{104,106}\text{Ru}$. 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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