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Analysis update for experiment RIBF142/NP1912-RIBF191

Wednesday 3 September 2025 15:20 (20 minutes)

We will provide an update on the analysis of RIBF142/NP1912-RIBF191, in which neutron-rich Titanium isotopes were produced and impinged on Be and Au secondary targets within the HiCARI gamma detector array. We measure $B(E2)$ values using the Coulomb excitation of ^{56,58}Ti, as well as with lifetime measurements using doppler-shift techniques. We also investigate neutron orbital occupation using the parallel momentum distribution of reaction products following neutron knockout. These data will allow us to probe the existence of the $N = 32, 34$ shell closures observed in Ca, with the $N = 34$ shell closure so far unobserved in neighbouring elements. We also measure lifetimes in the Sc isotopes produced in proton knockout reaction from ^{56,58}Ti.

Authors: REECE, Martha (GSI); POKLEPA, Wiktor (GSI)

Presenters: REECE, Martha (GSI); POKLEPA, Wiktor (GSI)