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3n Study at SHARAQ and New Multi-n Project at SAMURAI

Thursday, 3 August 2023 13:40 (25 minutes)

Correlations in multi-neutron systems have been fascinating topics in recent nuclear physics. In this presentation, we will present two of new experimental approaches on multi-neutron systems recently performed and planned at RIBF.
First, we explain our experimental study on 3n system via the 3H(t,3He)3n reaction at 170 MeV/u using the SHARAQ spectrometer. We have developed a thick tritiate titanium target dedicated for this purpose. With this target we have successfully obtained the differential cross section of the 3H(t,3He)3n reaction at Ex<20MeV and Theta<4deg.
Second, we introduce our new project of multi-neutron experiment at SAMURAI. By means of the knockout reactions on helium isotopes, we will produce various multi-neutron systems with neutron numbers up to 6. The overview and outlook of this project will be explained in the presentation.

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Session Classification: Clustering and multi-neutron systems