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Exploring multi-neutron systems at SAMURAI at RIBF

Thursday, 3 August 2023 10:50 (30 minutes)

I first characterize multi-neutron systems as pure-neutron nuclei and as neutron clusters at the surface of nuclei. Then, I show how to probe such a system using the proton-induced quasi-free scatterings in inverse kinematics for a rare-isotope beam. I introduce the ongoing development of experimental setups for such reactions at SAMURAI at RIBF: the STRASSE and the prototype PFAD, where, for the latter, I will show the results of the test experiment at HIMAC. I also present the planned experiment to search for multi-neutron clusters in the excited 10He and the 6n states at SAMURAI at RIBF. Finally, I will present future perspectives where I propose a new scheme of multi-neutron detection.

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Session Classification: Clustering and multi-neutron systems