Contribution ID: **17** Type: **Invited talk**

Four-neutron unbound nucleus 28O studied by the invariant mass method

Thursday, 3 August 2023 09:55 (25 minutes)

Many experimental and theoretical studies have been devoted to studying doubly magic unstable nuclei as they are important cornerstones for understanding many-nucleon systems located far from the beta stability. The 28O nucleus is the last candidate of the doubly magic unstable nuclei that can be experimentally accessible but has never been observed so far. We have carried out the invariant mass experiment at RIBF. The 28O nucleus was produced by one-proton removal reaction from a secondary 29F beam. The decay products, 24O and four neutrons, are detected in coincidence by SAMURAI combined with the liquid hydrogen target system MINOS and large neutron detector array NeuLAND. Thanks to the high 29F beam intensity, high luminosity of the thick liquid hydrogen target provided by MINOS, and high neutron detection efficiency, we have successfully observed the 28O nucleus for the first time. I will present the result of the 28O observation and related studies.

Primary author: KONDO, Yosuke (Tokyo Institute of Technology)

Presenter: KONDO, Yosuke (Tokyo Institute of Technology)

Session Classification: Shell Evolution towards 28O