

Study of ^{19}C using single-neutron knockout

Thursday, 7 June 2018 09:36 (18 minutes)

The evolution of shell structure toward the driplines is a subject of importance in nuclear physics. For a half decade the p-sd-shell nuclei have been a useful tool for expanding our understanding of shell evolution. ^{19}C is one of those nuclei, well known as the s-wave halo ground state. While the low-lying excited states with $3/2^+$ and $5/2^+$ were identified by experimental studies, there exists an argument of bound nature of $5/2^+$. From a theoretical point of view, shell model calculations with different interactions show discrepancy in location and ordering of levels.

We investigated the neutron-unbound states of ^{19}C using the one-neutron knockout reaction with SAMURAI spectrometer at RIBF, RIKEN. The ^{20}C beam impinged on a carbon target to produce ^{19}C . The decay products, ^{18}C and a neutron, were detected using SAMURAI and NEBULA neutron array.

In this talk, the observation of populated states and the discussion in the context of shell-model calculations will be reported.

Summary

Primary author: Dr HWANG, Jongwon (Center for Nuclear Study, University of Tokyo)

Presenter: Dr HWANG, Jongwon (Center for Nuclear Study, University of Tokyo)

Session Classification: Session 11