



独立行政法人理化学研究所 仁科加速器研究センター  
第116回RIBF核物理セミナー

RIKEN Nishina Center for Accelerator Based Science  
The 116th RIBF Nuclear Physics Seminar

Reaction cross sections of neutron-rich carbon isotopes and related topics

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Low-energy reaction cross sections for unstable nuclei are known to be sensitive to a dilute nuclear matter at the surface, such as neutron halo, as a result of an increased sensitivity of the nucleon-nucleon cross sections at the low energies. The energy dependencies of the reaction cross sections thus allow us to derive accurate density profiles and thereby explore exotic structures of unstable nuclei.

Recently, the reaction cross sections for  $^{19}\text{C}$ ,  $^{20}\text{C}$  and the drip-line nucleus  $^{22}\text{C}$  on a liquid hydrogen target have been measured by using the superconducting TOF spectrometer at RIPS. A large enhancement of the reaction cross section for  $^{22}\text{C}$  compared to those for neighboring C isotopes was observed and suggests the largest neutron halo.

In this talk, we will present recent achievements of the reaction cross section measurements at low energies and would also discuss a simple methodology to separate the proton and neutron density distributions of unstable nuclei.

Mar. 8( Tue), 2011 16:00-  
RIBF Conf. Hall, RIKEN

*The seminar will be given in English.*

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