



独立行政法人理化学研究所 仁科加速器研究センター  
第114回RIBF核物理セミナー

RIKEN Nishina Center for Accelerator Based Science  
The 114th RIBF Nuclear Physics Seminar

Measurements of Interaction cross sections at RIBF

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Interaction cross sections ( $\sigma_I$ ) for Ne, Na, and Mg isotopes from the stability line to the vicinity of neutron-drip line have been measured using BigRIPS at RIBF, RIKEN. Nuclear size of those isotopes have been studied with the use of Glauber-type calculation to search for the halo nuclei in this region.

Since 1990s, the vanishing of the  $N = 20$  magic number for neutrons have been extensively studied and discussed in so-called "island of inversion" region, which includes neutron-rich Ne, Na, and Mg isotopes.

In those studies, the inversion of amplitudes between sd-normal and pf-intruder shells has been considered along with nuclear deformation.

An advanced radioactive-beam facility enables us to explore the weakly-bound nuclei near the drip line in this island of inversion, and we can search for the possible large low- $Z$  halo formation caused by the anomalous shell structures. The recent results of  $\sigma_I$  measurements for Ne, Na, and Mg isotopes will be shown and some possible halo structures in those nuclei will be discussed.

*The seminar will be given in English.*

Feb. 15( Tue), 2011 13:30-  
RIBF Conf. Hall, RIKEN

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