



国立研究開発法人理化学研究所 仁科加速器研究センター
第228回 RIBF核物理セミナー
RIKEN Nishina Center for Accelerator Based Science
The 228th RIBF Nuclear Physics Seminar

Reaction cross sections as a probe of deformation and shell structures

Dr. Shin Watanabe
(RIKEN, Strangeness Nuclear Physics Laboratory)

Thanks to the development of experimental techniques, total reaction cross sections (σ_R) have recently been used not only for nuclear radii but also for deformation and/or skin structures. In this seminar, I will introduce such a recent trend of σ_R from the theoretical points of view, and mainly focus on σ_R as a probe of deformation. As an example, we investigate 24-38Mg through the σ_R measured at Radioactive Ion Beam Factory in RIKEN. It is well known that Mg isotopes around N~20-22 belong to the so-called "island of inversion (Ioi)" in which large deformation appears induced by intruder $2\hbar\omega$ configurations. We therefore investigate deformation by using a microscopic framework based on optical potentials constructed by the double folding model and densities calculated by antisymmetrized molecular dynamics (AMD). Our results suggest that there exists large deformation beyond the Ioi from N=19 (31Mg) to N=28 (40Mg).

* The talk will be given in English language..

Contact: Nuclear Physics Seminar Organizing Committee
npsoc@ribf.riken.jp
<http://ribf.riken.jp/~seminar/>

Dec. 6th (Tue.) 2016 13:30~
RIBF Hall (rm.201), RIBF bldg., RIKEN