



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209回 RIBF核物理セミナー

RIKEN Nishina Center for Accelerator Based Science
The 209th RIBF Nuclear Physics Seminar

Mapping the densities of exotic nuclei

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The reactions of exotic nuclei have been extensively studied, mostly with reference to some form of cluster theory, which reduces the many-body problem to a few-body problem. However, such an approach does not yield much information on the density of the exotic systems, especially as the core is usually treated as inactive. A more microscopic approach is required, with experiments which may probe the densities directly. So far, intermediate energy proton scattering of exotic nuclei, in inverse kinematics, has been the mainstay of the microscopic domain. However that scattering primarily probes the neutron density, as the proton-neutron part of the effective

nucleon-nucleon interaction in-medium is the most dominant. With the advent of SCRIT, we now have the possibility of directly probing the proton densities of exotic nuclei through electron scattering, and by combining with proton scattering analyses we will be able to obtain a full mapping of the matter densities of exotic nuclei. I will introduce such an approach with respect to the He isotopes, highlighting the information one may obtain on the densities of such neutron-rich nuclei.

* The talk will be given in English language..

Nov. 20th (Fri.) 2015 13:30 ~
RIBF Hall (rm.201), RIBF bldg., RIKEN

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