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Exotic structure of ^{15,17}B probed through charge changing cross section

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In the neutron-rich zone of the nuclear landscape, nuclei develop unconventional forms such as neutron halo and skin with a surface largely made up of neutrons. This large difference of the proton and neutron distributions give rise to unexpected phenomena whose complete understanding is closely tied to gaining knowledge on correlation between nucleons and features of the nuclear interaction. The exotic structures are intimately related to new characteristics of nuclear shell structure.

The study of the effect of neutron excess on the proton distribution is gradually unfolding before us a more comprehensive understanding on the structure and correlations of the excess neutrons. The presentation will discuss the new technique of charge changing cross section measurements for determining the charge radii of neutron-rich nuclei using the fragment separator FRS at GSI.

New observations for neutron-rich boron isotopes, ^{15,17}B, will be presented. The knowledge of charge radii coupled together with information on matter radii can help to elucidate the correlated three-body structure of the borromean nucleus ^{17}B.

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