

Structure studies of unstable nuclei by electron scattering

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Electron scattering provides essential information on the internal structure of atomic nuclei. A new experimental scheme, **SCRIT** (Self-Confining **R**adioactive **I**sotope **T**arget), is proposed to study the internal structure of short-lived nuclei by electron scattering. Using a well-known ion-trapping phenomena at electron storage ring facilities, SCRIT forms a localized RI target on the circulating electron beam at an electron storage ring. Numerical simulations show that SCRIT provides a sufficiently high luminosity [1] for elastic electron scattering experiments to determine the charge form factor of short-lived nuclei, which has been never measured experimentally. A feasibility study of this new SCRIT scheme is now underway at an existing electron storage ring.

In the workshop, I will briefly introduce the electron scattering experiments for the charge form factor measurement, and discuss on the required luminosity. The SCRIT scheme is, then, introduced, and the results of feasibility studies currently on-going at an electron storage ring facility will be discussed.

[1] M. Wakasugi, T. Suda and Y. Yano, Nucl. Instrum. And Method A532 (2004) 216.

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