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The SCRIT Electron Scattering Facility

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Abstract content
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The world's first electron scattering facility dedicated to the structure studies of short-lived nuclei, the SCRIT Electron Scattering Facility, will soon start its operation. I will discuss the facility details and physics pursued at this facility including future perspectives.

The goal of this facility is to study the internal structures of exotic nuclei by electron scattering, and the immediate goal is to determine the charge density distribution by elastic electron scattering whose cross section is the largest up to a certain momentum transfer. It has been already demonstrated that the luminosity required for elastic scattering experiments, 10ˆ{27}/cmˆ2/s, is achievable at this facility.

The SCRIT electron scattering facility consists of the 150-MeV microtron injector, 700-MeV electron storage ring equipped with the SCRIT system, an ISOL for neutron rich isotope production and an electron spectrometer. The electron accelerators and the SCRIT system have been already commissioned, and the commissioning of the ISOL and spectrometer is underway.

The target isotopes for the Day-One experiment will be Sn including the doubly magic nucleus ˆ{132}Sn. A systematic change of the charge distributions for ˆ{112}Sn - ˆ[132}Sn will be revealed.

Recently, additional research opportunity at the SCRIT facility has been pointed out; the measurement of the photoabsorption cross section over a wide photon energy range, 5 < E¥gamma < 40 MeV.

In the talk, we will describe the facility details, physics program and future perspectives.

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