

Extracting Nuclear Form Factors from Coherent Neutrino Scattering

Recently the COHERENT collaboration reported the first observation of coherent elastic neutrino nucleus scattering (CENNS), opening the door to the use of neutrinos for the study of nuclear properties. Studying the CENNS spectrum, indeed, it is possible to measure the electroweak nuclear form factor and therefore constrain the neutron distribution. It is possible to use the neutrinos produced in existing or planned accelerators in China for such an experiment: this opportunity will be discussed, as well as the impact of the systematic errors in the precision that can be achieved. Indeed, the uncertainty on the quenching factor can significantly affect the final result, this will be shown assuming the Helm model for the neutron distribution as well as using a model-independent analysis, based on the determination of the distribution's momenta.

Session and Location

Wednesday Session, Poster Wall #27 (Robert-Schumann-Room)

Poster included in proceedings:

yes

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Track Classification: Poster (participating in poster prize competition)