

Low-energy precision measurements at the intensity frontier

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Measurements of observables in nuclear beta decay and neutron decay continue to provide important information on the structure and symmetries of the weak interaction at low energy. Here the focus will be on state-of-the-art precision measurements in nuclear beta decay using a variety of techniques, many of which are based on ion and atom traps. A large number of experiments is currently ongoing or being set up at radioactive ion beam facilities worldwide. Comparing experimental results with the standard model expected values allows testing the standard model or searching for physics beyond.

An update and overview of this field will be presented. With the precision of these measurements reaching the per mille level small standard model effects now have to be included as well. The understanding of some of these requires additional measurements be performed in order to maintain optimal sensitivity to weak interaction properties. Prospects and future of this type of low-energy weak interaction studies in the era of the Large Hadron Collider will be discussed briefly as well.

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