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Nuclear structure research and applications with Radioactive Ion Beams at ISOLDE/CERN

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The ISOLDE facility at CERN has the largest range of radioactive beams available worldwide. Produced with the Isotope-Separation-On-Line technique, those beams allow high-precision measurements of the nuclear properties, and are as well used for research in related fields. At the Institute for Nuclear and Radiation Physics at the KU Leuven, different groups exploit the opportunities at ISOLDE in a number of activities. Nuclear structure is studied using laser spectroscopy, decay and reaction methods, with a focus on the new phenomena appearing in system far from stability. Properties of the fundamental interactions are investigated through precision measurements of the nuclear beta-decay. Solid-state physicists use the ISOLDE radioactive ions as probes of bulk and 2D-materials. Finally, the proton beam of the PS-Booster is used at MEDICIS to research innovative isotopes for medical application. This talk will give an overview of these activities.

Summary

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Session Classification: Invited