

Plenarvortrag

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Nuclear Structure Studies using Coulomb Excitation at REX-ISOLDE (CERN) — •NIGEL WARR for the Miniball-Collaboration
— Institut für Kernphysik, Universität zu Köln

Coulomb excitation (Coulex) was one of the main tools for studying nuclei in the early days of nuclear physics, as it can be performed at relatively low beam energies. With improvements to accelerators, this technique became somewhat neglected and nuclear physicists shifted their focus to high spin. In the last 15 years, however, the advent of post-accelerated radioactive beams from ISOL facilities like REX-ISOLDE (CERN) has renewed interest in Coulex. As these beams generally have low energies, techniques like Coulex have come back into

fashion, with the important difference, that it is now the Coulex of the exotic beam rather than a stable target, which is of interest. The nuclei of interest have a significant velocity, making a Doppler-shift correction essential. The Miniball array pioneered such γ -ray spectroscopy with radioactive beams at REX-ISOLDE and was the first of the new generation of segmented-detector arrays, which have lead the way forward towards tracking detectors like AGATA. This lead, as a direct consequence, to an increased interest in Coulex, whether it be for the island of inversion around ^{32}Mg or for the octupole deformation of ^{224}Ra . Examples will be presented from over a decade of Coulex studies with Miniball at REX-ISOLDE as well as the prospects for Coulex with the upgrade of this facility: HIE-ISOLDE, which came online this autumn, with energies of up to 4 MeV/nucleon.