

MINIBALL at REX-ISOLDE: current status and perspectives

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In this presentation a sample of recent results using the MINIBALL gamma array coupled to the radioactive beam facility REX-ISOLDE will be presented.

The MINIBALL detector consists of eight triple cluster detectors each of them containing 6-fold segmented individually encapsulated HPGe detectors [1]. It surrounds the reaction chamber that houses an annular double-sided silicon strip detector of the CD type [2] in order to detect the reaction products, their energy and direction of flight. The REX-ISOLDE radioactive beam accelerator uses a unique concept to post-accelerate the wide spectrum of existing ISOLDE beams to energies up to 3.1 MeV/u [3].

Coulomb excitation measurements have been performed in specific regions of the nuclear chart (e.g. $^{30,32}\text{Mg}$, $^{74-78}\text{Zn}$). Some results will be highlighted during the presentation and compared with theoretical calculations. Details on how one of the most crucial parameters, namely the beam purity, is determined in a reliable way using the unique properties of laser ionization will be given. Also the possibility to produce post-accelerated isomeric beams from ISOLDE and use them for Coulomb excitation measurements and other reaction studies as well as new perspectives will be presented.

[1] J. Eberth et al., Prog. in Part. and Nucl. Phys. **46**, 389 (2001)

[2] A.N. Ostrowski et al., Nucl. Instr. Meth. **A453**, 448 (2002)

[3] D. Habs et al., Hyp. Int. **129**, 43 (2000)