

Coulomb Excitation Studies at REX-ISOLDE

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In the last years the combination of the high-efficiency, high-granularity Ge detectors array of Miniball with the large variety of post-accelerated radioactive ion beams from REX-ISOLDE has proven to give unique opportunities for nuclear structure investigation far from stability. One of the first steps in these studies has been the application of the Coulomb-excitation technique to a number of radioactive nuclei both on the neutron-rich and neutron-deficient side of the nuclear chart. The successful extraction of molecular beams as well as the use of the Resonant Ionization Laser Ion Source (RILIS) has provided very high quality isobaric purification and allowed state-of-the-art experiments using isomerically enhanced beams, like in the case of $^{68\text{m}}\text{Cu}$ and $^{70\text{m1,m2}}\text{Cu}$.

A short overview will be given including the some details on the present status of the Miniball setup and few results from recent measurements. The main part of the talk will be devoted to recent results from Coulomb excitation studies of odd-mass and odd-odd Copper isotopes (from ^{67}Cu to ^{73}Cu) and to their contribution to our understanding of the nuclear structure around neutron-rich $N=40$ and towards $N=50$. These results have shown that the Coulomb excitation technique can go beyond its standard applications for transition-probability determination and, due to its specific selection rules, can bring specific spectroscopic information on the nuclei of interest.