

Magnetic and quadrupole moments of Cu isotopes with collinear laser spectroscopy

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In this presentation we report on the measurement of the magnetic and quadrupole moments of the Cu isotopes with collinear laser spectroscopy at the Collaps beamline, along with the extraction of the mean square charge radii of the Cu isotope chain.

The Cu isotopes have only one proton outside the magic $Z=28$ shell, and have therefore attracted a lot of nuclear research interest in the past decade. The obtained results from three experiments at the Collaps beamline are presented, the last of which employed the recently installed RFQ beamcooler. Important results such as the spin of ^{75}Cu , the onset of deformation beyond the $N=40$ subshell gap and the trend of the magnetic moments along the isotope chain will be discussed. The moments extracted from these measurements are compared with theoretical calculations and clearly present a challenge for the current theoretical models in this region of the nuclear chart.

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