

Exploring the secrets of the atomic nucleus with the COLLAPS setup at CERN

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The COLLAPS experiment stands at the forefront of collinear laser spectroscopy, a field dedicated to the precise measurement of unique nuclear characteristics in short-lived and exotic radioactive nuclei. By analyzing hyperfine structures and isotope shifts, it determines nuclear spins, electromagnetic moments, and charge radii.

At its core, COLLAPS seeks to unravel the mysteries surrounding nuclear existence: the boundaries defining it, the emergence of simple patterns within complex nuclear structures, and the possibility of previously unknown structural forms in regions far from stability. To explore these questions, the COLLAPS collaboration employs highly precise and sensitive laser spectroscopy techniques.

This presentation will introduce the COLLAPS setup and highlight some of the most recent discoveries and results from the experiment.

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