



Contribution ID: 12

Type: Poster

## **【381】 Towards Precision X-Ray Spectroscopy of Muonic low-Z Atoms Using Metallic Magnetic Calorimeters**

*Tuesday 10 September 2024 19:46 (1 minute)*

To improve existing theoretical models and obtain accurate values for fundamental constants, precise measurements of absolute nuclear charge radii are necessary. These can help in improving our knowledge of bound-state QED and aid in exploring new physics beyond the Standard Model.

While muonic atom spectroscopy is known for its precision, measuring  $2p-1s$  transition energies for low- $Z$  nuclei of 20–150 keV has proven to be challenging, due to the energy resolution limitations of solid-state detectors.

The QUARTET collaboration aims to improve these measurements by using a new metallic magnetic calorimeters detector to conduct high-precision X-ray spectroscopy of low-lying states in muonic atoms.

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**Session Classification:** Poster Session

**Track Classification:** Nuclear, Particle- and Astrophysics (TASK)