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## Muonic X-ray spectroscopy at the Paul Sherrer Institute

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Muonic atoms are exotic bound systems consisting of a negative muon and a nucleus. Due to the small Bohr radius of the muon and thus significant overlap of its wave function with the atomic nucleus, this hydrogenlike system forms an excellent laboratory to study nuclear finite size effects.

Laser spectroscopy can determine the energy levels of a muonic atoms with unprecedented precision, and has been applied to hydrogen and helium atoms with great success. The nuclear charge radii of most stable nuclei have been determined using X-ray spectroscopy with high-purity germanium detectors, a method which is currently being extended to long-lived radioactive isotopes. For light nuclei from lithium until oxygen, a new experimental method using metallic magnetic calorimeters is being developed.

I will give an overview of ongoing and planned muonic atoms spectroscopy measurements at the Paul Scherrer Institute.

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