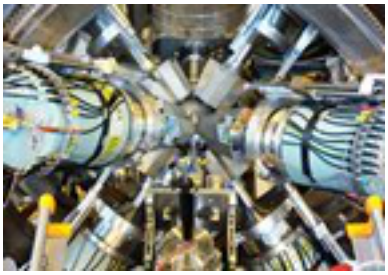

Contribution ID: **6** Type: **Invited**

Toward the measurement of the nuclear charge radius of 226Ra

Friday, 21 October 2016 12:00 (30 minutes)

Muonic atoms as laboratories for fundamental physics provide crucial input to quantum electrodynamics, the weak interaction and the strong interaction. Many studies of muonic atoms have relied on the detection of X-ray from the muonic cascades. Most stable and a few unstable isotopes have been investigated with muonic atom spectroscopy techniques. In particular, muonic atoms have been used to extract the most accurate nuclear charge radii. However, experiments with muonic atoms have been limited by low muon rates, poor beam quality and large muon stop volumes, but also by available detector technology for this environment. While beam intensities and quality have been improved in recent years, still no higher multiplicity spectroscopy of muonic cascades has been performed.

We are preparing an experiment to determine the charge radius of radium, which is one of the missing parameters for the measurement of atomic parity violation in radium. In this talk I will present the plans and status of the experiment and the results of our last beam time.

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Session Classification: Muon spectroscopy for nuclear charge radii