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## **[327] Muonic Atom Spectroscopy of $^{238}\text{U}$**

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Muonic atom spectroscopy can be used to determine nuclear charge radii as muons orbit close to the nucleus, making them highly sensitive to nuclear properties. The muX experiment aims to determine the nuclear charge radius of Radium-226. However, radioactive isotopes are available only in microscopic quantities. To address this, the muX collaboration developed a novel technique based on transfer reactions in a high pressure hydrogen/deuterium gas mixture. Once captured, the muons cascade down to their ground state, emitting characteristic X-rays whose energy provides insights into nuclear properties. In the case of Uranium-238, the muonic spectrum has been analyzed, studying the cascade behaviors associated with direct and transfer muon capture.

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