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[314] Muonic atom spectroscopy with radioactive targets

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MuX, an experiment running at PSI, aims to measure the nuclear charge radius of radioactive isotopes, such as ^{226}Ra and ^{248}Cm , using muonic atoms. With safety regulations imposing the usage of only microgram quantities of radioactive material the standard method to form a muonic atom by direct muon capture cannot be implemented. A technique that employs muon transfer reactions in a high-pressure cell filled with D_2/H_2 mixture is used instead. This enabled the measurement of ^{226}Ra and ^{248}Cm in 2019. Despite no $2p \rightarrow 1s$ muonic x rays being observed for radium, we are close to determining the charge radius in ^{248}Cm . This contribution presents the status of the muX experiment.

Theoretical Work

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