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【363】Muonic atom spectroscopy with radioactive targets

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An experiment at PSI, carried out by the muX collaboration, aims to measure the nuclear charge radii of radioactive elements such as ^{226}Ra and ^{248}Cm with muonic atoms. An intermediate test performed with ^{185,187}Re targets in 2016 led to the extraction of their spectroscopic quadrupole moments. Typical muonic spectroscopy experiments require targets of several grams. Restrictions applying to radioactive targets limit their usage to µg-quantities where the direct muon capture cannot be accomplished. A technique to transfer muons to µg targets has been developed by the muX collaboration employing a pressure cell with a 100 bar D_2/H_2 gas mixture. In this contribution, the current status of the muX experiment is presented.

Authors: VOGIATZI, Stergiani Marina (PSI - Paul Scherrer Institut); FOR THE MUX COLLABORATION

Presenter: VOGIATZI, Stergiani Marina (PSI - Paul Scherrer Institut)

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