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Laser shed new light on Halos - Nuclear charge radii of 11Li and 11Be

Abstract

High-resolution laser spectroscopy can be combined with accurate atomic physics calculations for the determination of nuclear charge radii of light elements. To obtain simultaneously the required high sensitivity and accuracy is the main challenge in these experiments and dedicated approaches have to be used for each individual element. I will give a short report on measurements of lithium isotopes including 11Li performed at TRIUMF in 2004 and then describe the experimental assembly that we are currently setting up for measurements of the isotope shifts of the beryllium isotopes Be-7,9,10,11.