

Fundamental tests of nature with cooled and stored exotic ions

Prof. Dr. Klaus Blaum
Director at the Institute
Max-Planck-Institut für Kernphysik
Saupfercheckweg 1
69117 Heidelberg
klaus.blaum@mpi-hd.mpg.de
<http://www.mpi-hd.mpg.de/blaum/>

ABSTRACT:

The presentation will concentrate on recent applications with exciting results of Penning traps in atomic and nuclear physics with cooled and stored exotic ions. These are high-accuracy mass measurements of short-lived radionuclides, g -factor determinations of the bound-electron in highly-charged, hydrogen-like ions and g -factor measurements of the proton and antiproton. The experiments are dedicated to nuclear-, neutrino- and astrophysics studies in the case of mass measurements on radionuclides, and to the determination of fundamental constants and a CPT test using g -factor measurements.

