

IJC colloquium

Klaus Blaum Max-Planck-Institut für Kernphysik, Heidelberg, Germany



Klaus Blaum studied physics at the Johannes Gutenberg-University in Mainz (Germany). After receiving his PhD, he worked as PostDoc at GSI and CERN. From 2004 to 2007, he was leader of a Helmholtz Research Group in Mainz (Germany), where he habilitated in 2006. At the age of only 35 years, he was appointed Director of the department «Stored and cooled ions» at the Max Planck Institute for Nuclear Physics in Heidelberg and Professor in the Department of Physics and Astronomy at the Ruprecht-Karls-University Heidelberg. For his groundbreaking research on precision measurements with nuclei and ions, he was awarded the 2020 Lise Meitner prize of the European Physical Society and he is currently Scientific Vice President of the Chemistry, Physics and Technology Section of MPG.

Physics and Technology Section of MPG.

Precision mass measurements for nuclear physics, neutrino physics and tests of fundamental symmetries.

This review provides an overview on the latest achievements and future perspectives of Penning-trap mass spectrometry on short-lived as well as stable nuclides with applications in nuclear structure, neutrino physics, and most recently even in dark matter searches where relative mass uncertainties at the level of 10^{-11} and below are required. Rapidly developing neutrino physics has found in Penning-trap mass spectrometry a staunch ally in investigating and contributing to a variety of fundamental problems. The most familiar are the absolute neutrino mass and the possible existence of resonant neutrinoless double-electron capture / double-beta decay. In addition, the most stringent test of CPT symmetry in the baryonic sector by mass comparison of the antiproton with H will be presented.

Jeudi 8 septembre 2022
à 10H30

Auditorium
Joliot-Curie
Bât.100



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