# HK 29: Hauptvorträge II

Time: Wednesday 9:30–10:30 Location: HS1

**Invited Talk** HK 29.1 Wed 9:30 HS1

**High precision laser spectroscopic measurements of the structure of halo nuclei** — •Peter Müller — Argonne National Laboratory, Argonne, IL, USA

We will review the current status of laser spectroscopic precision measurements of the structure of halo nuclei as carried out at Argonne, GANIl, ISOLDE, and TRIUMF

**Invited Talk** HK 29.2 Wed 10:00 HS1

**SHIPTRAP on the way towards mass measurements of superheavy elements** — •Michael Block for the SHIPTRAP-Collaboration — GSI Helmholtzzentrum, Planckstrasse 1, 64291 Darmstadt

The region of superheavy elements is of great interest for nuclear structure studies as these elements owe their very existence to nuclear shell effects. Thus, they are a prime testing ground for nuclear theories at the extremes. A challenge for detailed experimental studies of their properties arises from their low production rates in complete-fusion reactions. However, the combination of buffer gas stopping and advanced ion-beam manipulation techniques has paved the way for high-precision measurements of ground state properties using ion traps. The Penning trap mass spectrometer SHIPTRAP at GSI was the first to perform direct mass measurements of rare isotopes above uranium. Recently, the masses of several nobelium (Z=102) and lawrencium (Z=103) isotopes with yields as low as about one particle per minute have been measured. The accurate mass values provide reliable anchor points in the region of the heaviest elements and give experimental access to their binding energy for studies of the nuclear shell structure evolution. In the near future several technical improvements will extend the reach towards superheavy elements.