

Plenary Talk PV I Mon 13:15 Kurt-Alder HS Chemie
Magic Moments: Exotic Calcium Isotopes in Laser Light —
•WILFRIED NÖRTERSCHÄUSER — TU Darmstadt, Institut für Kern-
physik

The chain of calcium isotopes has been of interest for long since it is unique in having two stable doubly magic isotopes and a particular pattern of charge radii with those of the doubly magic $^{40,48}\text{Ca}$ nuclei being similar despite the 40% difference in neutron number. Improve-

ments in experimental techniques allowed us to expand the knowledge of ground-state nuclear structure from ^{36}Ca almost at the neutron dripline up to the neutron-rich ^{54}Ca during the last years. This included laser spectroscopy of ^{54}Ca at a production rate of less than 1 ion/s at ISOLDE/CERN. Progress has also been made in laser spectroscopy in the neighboring elements and results are used to benchmark nuclear structure theory and provide a challenge for ab initio, density functional, and nuclear shell-model calculations.