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Overview of ISOLTRAP's mass measurements (the 2017 edition)

Monday 4 December 2017 16:30 (30 minutes)

This presentation will focus on the experiments carried out during 2017 with ISOLTRAP, the versatile mass spectrometer situated at ISOLDE/CERN. Highlights of this year's campaign were the precision mass measurements of neutron-rich krypton ($^{98,99}\text{Kr}$), argon (^{48}Ar) and cadmium ($^{127,129,131,132}\text{Cd}$) isotopes addressing, respectively, the onset of deformation in the $A \approx 100$ region and the quenching of the neutron shell gaps at $N = 28$ and 82 far from stability. Over the course of the year ISOLTRAP performed several tests with ISOLDE beams, including the implementation of the Phase-Imaging Ion-Cyclotron-Resonance Mass Spectrometry to study the $^{88}\text{Rb} - ^{88}\text{Sr}$ Q -value. The value was determined to better than 200 eV precision. Furthermore, by using Multi-Reflection Time-Of-Flight Mass Spectrometry the ISOLTRAP team together with the RILIS and the ISOLDE target and ion-source groups performed a yield study of neutron-rich titanium and scandium. The outcome of these tests as well as preliminary results from the mass measurements will be discussed.

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