Contribution ID: **136** Type: **Oral invited talk**

Recent MR-TOF-MS developments at Jyväskylä

During the last decade Multi-Reflection Time-of-Flight Mass-Spectrometers (MR-ToF-MS) [1] have been established as integral parts of radioactive beam facilities. These devices are used to separate and to measure the atomic masses of particularly exotic, short-lived radioactive nuclei to high precision, shedding light on the nuclear forces [2], the composition of neutron stars [3], and the yields of radioactive ion production [4]. An MR-ToF-MS has been integrated to the University of Jyväskylä Ion-Guide Isotope-Separator On-Line (IGISOL) facility [5] and utilized for mass separation and measurements of exotic radioactive nuclei. In this overview, technical developments of the IGISOL MR-ToF-MS and the miniaturized radiofrequency quadrupole cooler-buncher [6]; the recent on-line measurement results, including a solution to the long-standing two-proton decay conundrum of 94Ag(21+); and the results of the latest MR-ToF-MS assisted in-source laser spectroscopy of Ag isotopes are presented.

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Session Classification: Instrumentation for RIB experiments II

Track Classification: Ion optics and spectrometers