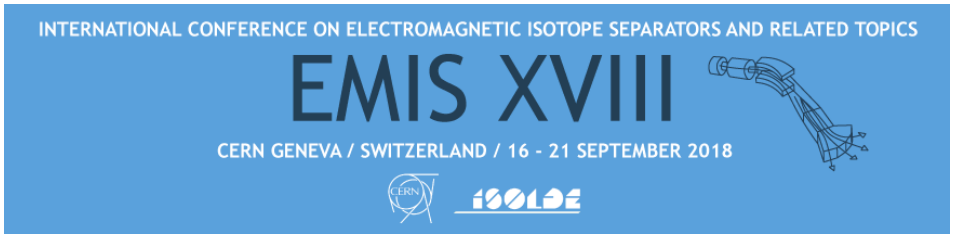

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The ISOLDE Decay Station - a Swiss Army knife for nuclear physics

Tuesday, 18 September 2018 14:45 (20 minutes)

On behalf of the IDS-Windmill-RILIS collaboration

The ISOLDE Decay Station (IDS) [1] has been a permanent experiment used for studies of low-energy nuclear physics at the CERN-ISOLDE facility, since 2014. The core of the setup consists of four, high-efficiency, clover-type germanium detectors and a tape transportation system. These can be coupled to a number of ancillary detector arrays, used for alpha/beta/gamma spectroscopy, neutron time-of-flight studies, or fast-timing measurements, making IDS a powerful and versatile tool for studying the wide range of radioactive species that are readily produced at ISOLDE.

In this contribution, an overview the IDS system and its detectors will be presented, along with preliminary results from recent experiments performed at IDS [2]. In particular, results from an in-source laser spectroscopy study of bismuth isotopes [3] will be shown, in which a new high-spin isomer was identified and studied in 214Bi, thanks to the high gamma-ray detection efficiency of IDS. Plans for studying the low-lying excited states in 182,184,186Hg, and the incorporation of a new SPEDE conversion electron detector [4] at IDS, will also be revealed [5].

[1] http://isolde-ids.web.cern.ch/isolde-ids/
[2] A. Illana et al., IS622 experiment; L. Fraile et al., IS610 experiment; R. Lica et al., IS650 experiment; O. Tengblad et al., IS633 experiment, (2017-2018)
[3] A. Andreyev et al., IS608 experiment, (2016-2018)
[4] P. Papadakis et al., Eur. Phys. J. A 54, 42 (2017)
[5] K. Rezynkina et al., IS641 experiment, (2018)

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