



Contribution ID: 62

Type: **Invited**

ISOLDE-RILIS: new features - more possibilities

Thursday, 3 December 2015 09:00 (20 minutes)

The Resonance Ionization Laser Ion Source (RILIS) is the most frequently applied ion source type at ISOLDE. The RILIS method of step-wise resonance laser excitation and ionization of the nuclear reaction products, makes it both highly selective and efficient. A continuous program of technical upgrades of the laser installation, as well as research and development of the RILIS technique, is necessary to fulfil the ever-increasing demand for new, more intense, or higher purity ion beams. The laser launch system for the GPS front-end was redesigned and the laser beam reference area was rebuilt and upgraded with a refined beam stabilization and monitoring system. This, in conjunction with the implementation of an autonomous machine protection system, enabled "on-call" RILIS operation, successfully tested for the first time during the 2014 ISOLDE on-line period, to become the standard mode of operation in 2015. The RILIS DAQ system has been upgraded and streamlined, managing the links between the RILIS, the Windmill detector system and the ISOLTRAP MRToF-MS for in-source laser spectroscopy experiments. Ongoing developments envisage further exploitation of the bunched time structure of the RILIS laser ions. A new fast beam switching option has been tested, showing promising results and plenty of applications for ISOLDE users.

We present the status of the RILIS system, a summary of the operation in 2015, recent upgrades and new capabilities. Concluding with an outlook considering the promising future areas of development.

Primary author: ROTHE, Sebastian (University of Manchester (GB))

Presenter: ROTHE, Sebastian (University of Manchester (GB))

Session Classification: Technical Session 1