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Recent operation and outlook for the ISOLDE Resonance Ionization Laser Ion Source (RILIS)

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As the most commonly used ion source of the ISOLDE facility, the RILIS is in a virtually uninterrupted cycle of setup and operation during the on-line period. In 2012, for example, RILIS ionized beams of 13 elements were produced for 24 separate runs. This required approximately 3000 hours of on-line operation for which 344 RILIS operator shifts were scheduled. This intensity of use is unique among laser ion sources worldwide and requires at least 4 laser operators per run, a highly reliable laser system, and careful scheduling of ISOLDE experiments. Recently, efforts have been made to facilitate the setup and maintenance of optimal RILIS parameters through the integration of remote laser control, monitoring and data acquisition tools. To complement these developments, a project is underway to build and install a comprehensive RILIS machine protection and status monitoring system. This should enable a transition to on-call operation for many RILIS runs and is a pre-requisite for any future increase of annual operating hours.

A summary of the 2013 operating period will be given and details of future improvements of the RILIS installation, including the RILIS control, monitoring and machine protection system, will be shown.

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