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## Atomic Physics Experiments at TSR@ISOLDE

*Monday 29 October 2012 14:00 (30 minutes)*

TSR@ISOLDE will provide new possibilities for atomic physics experiments with highly charged atomic ions addressing atomic structure (atomic lifetimes, spectroscopy with lasers and ultra-cold electron beams) and atomic collision processes (electron-ion recombination, electron-ion impact ionization). This research is motivated by fundamental physics questions and by applications in astrophysics and plasma physics.

We will present selected illustrative examples from the ongoing atomic physics research program at TSR and point out future directions at TSR@ISOLDE in view of the availability of very high ion charge states and of ions with exotic nuclei. In particular we will discuss measurements of hyperfine-induced and two-photon transitions in highly charged ions and atomic-collision processes that are relevant for the understanding of super-nova explosions and fusion plasmas.

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