

Progress and future outlook for the CRIS project at ISOLDE

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The new Collinear Resonant Ionization Spectroscopy (CRIS) experiment aims to study the rarest isotopes produced at ISOLDE by using a combination of two techniques: resonant ionization spectroscopy (RIS) and collinear laser spectroscopy. The initial proposal will study the rare Francium isotopes. On the neutron-deficient side the role of the deformed $(\pi s_{1/2-1})_{1/2+}$ intruder state will be investigated, while on the neutron-rich side we will study the ground state properties of the short lived isotopes that lie on the boundary of the region of reflection symmetry breaking. This project also offers the possibility of producing ultra-clean isomeric beams, which can be studied independently of the ground state or other isobars. The installation of the new CRIS experimental line and laser laboratories has been ongoing throughout 2009. The initial construction and vacuum testing stages have been successfully completed. A novel laser setup is being developed, which aims to provide a compact and versatile method of performing laser spectroscopy. This talk will discuss the initial physics case and the current progress of the CRIS experiment as we prepare for the first on-line run in 2010.

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