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Resonant laser ionization spectroscopy to study Rydberg and autoionizing states

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Resonant laser ionization spectroscopy uses multiple lasers to step-wise excite atom, therefore is a powerful tool for the study of high energy atomic structures, such as Rydberg states and autoionizing states. At the laser ion source test stand (LIS-stand) in TRIUMF, resonant laser ionization spectroscopy is used to study complex atoms. The spectroscopy results not only provide efficient laser ionization schemes for on-line laser ion source beam delivery of these elements but also the information of Rydberg and autoionizing states. This allows also to refine the energy of the ionization potential of these elements as well as extract information on some electron correlations. An overview of the off-line resonant laser ionization spectroscopy at TRIUMF will be presented.

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