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Spectroscopy of Exotic Nuclei via Proton Removal

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Inverse kinematics proton removal reactions using light targets are now well established as a powerful tool for spectroscopy of neutron-rich nuclei. The peripheral nature of these so-called knockout reactions enables the use of simple eikonal models to calculate single-particle cross sections and deduce spectroscopic factors. Exclusive experiments have shown these models to predict the relative proportions of the different components of the cross sections very accurately. However, these models have limitations such as the absence of core excitations for instance, and benchmarking the deduction of spectroscopic factors remains a challenging task. In particular, differences with respect to other reactions tools such as transfer reactions or quasi-free proton and electron scattering, are still unexplained. This talk will concentrate on establishing the current status of knockout reaction mechanism studies and benchmarking efforts.