

## Laser spectroscopy for nuclear structure studies

There are few properties more fundamental to a nucleus than its shape and size. Laser spectroscopy aims at studying the nuclear spin, changes in mean-squared charge radii as well as electromagnetic moments through the hyperfine interaction between the nucleus and its surrounding electrons.

As the technique of laser spectroscopy is not limited to specific mass regions, a multitude of nuclear structure phenomena may be studied. Recent investigations include the shape evolution of neutron-deficient francium isotopes, the onset of deformation around  $N=60$  as well as the first study of doubly charged radioactive ions.

With the quest of proceeding to the rarest isotopes and the fight against the decrease in yield, a number of modifications are made to the more conventional techniques in order to increase the experimental efficiency. One of the latest new developments is related to enhancing the observed count rate for weaker hyperfine transitions.

Results from experiments at TRIUMF and the JYFL Accelerator laboratory will be presented alongside the techniques developed to pursue those studies.