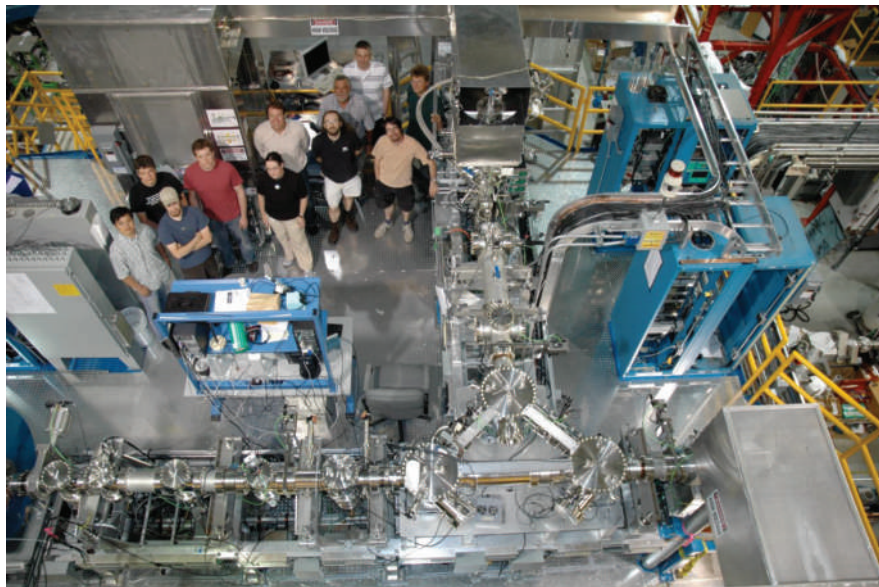


Fundamental Symmetries in Atoms and Ions

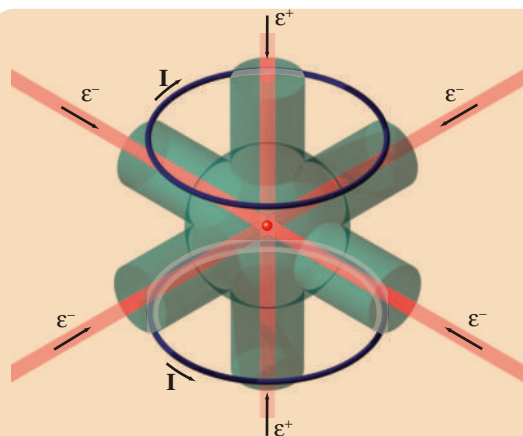
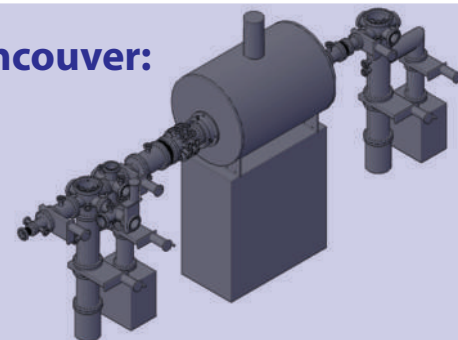
Testing the fundamental laws of nature with precise atomic spectroscopy



Our group is involved in several experimental tests of fundamental symmetries of nature, using the precise techniques of atomic physics such as laser spectroscopy and atom trapping and cooling.

The TITAN facility at TRIUMF, Vancouver:

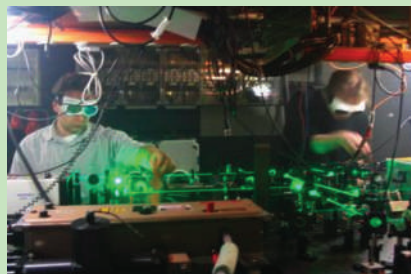
- precise mass measurements of unstable nuclei
- we are building a cooler ion trap to cool highly charged ions with cold electrons



Atomic parity violation in francium at TRIUMF

We are starting up a new experiment to search for “physics beyond the Standard Model” using laser-trapped francium atoms, the rarest element on earth

The most accurate test of relativistic time dilation using optical ion clocks circulating in a storage ring at up to 33% of the speed of light, in collaboration with Nobel Laureate Ted Hänsch



Contact: Dr. Gerald Gwinner

For summer 2010, there will be opportunities to work on the laser trap (UoM) and possibly also the cooler ion trap (TRIUMF)



**TRIUMF
UBC, Vancouver**