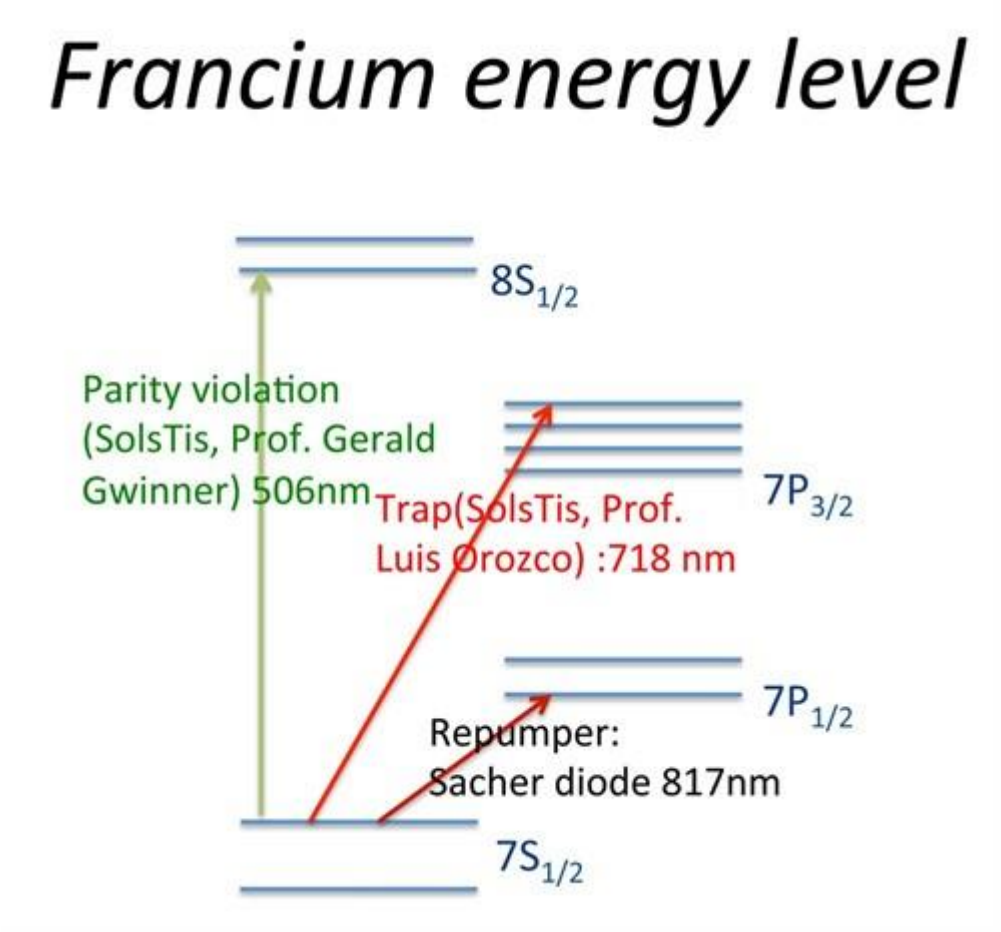
Francium Collaboration | Triumf | SolsTiS

Triumf is Canada's National Laboratory for Particle and Nuclear Physics. The collaboration, led by Professor Luis Orozco, is seeking to measure the weak nucleon–nucleon interactions by parity non–conservation measurements in Francium (FrPNC).

The team now has two SolsTis lasers in the lab. The first is pumped by a Verdi G10 laser, and is being used at 718nm (D2 line) for trapping Francium. It gives 1.7W of output at 718nm which they describe as "excellent power compared to our old lasers."



The second SolsTis laser is a complete system, with pump, Ti:sapphire, and ECD–X. It is optimized for the long wavelength range, especially 506nm (1012nm fundamental) output, which is the wavelength for francium 7s–>8s forbidden E1 transition. Due to parity violation in the atom, the forbidden electrical dipole transition should have a tiny amplitude, because of opposite state mixing, from the weak interaction. The group ininitally considered a range of different lasers for the job, but the SolsTis won "because of the good power and good versatility."

(Thanks to Mr. Jiehang Zhang).