Precision Measurements working group

WG organizer:

K. Minamisono (MSU)
N. Scielzo (LLNL)
R. Ringle (MSU)

Participation:

7 oral presentations, ~ 35 participants

Program:

August 21, 2015, 13:30 - 15:30 in BPS 1420

13:30 - 13:43 Maxime Brodeur (Notre Dame): Precision half-lives measurements at the University of Notre Dame
13:43 - 13:56 Andrew Miller (MSU): Charge radii measurements at BECOLA
13:56 - 14:09 Charlie Rasco (LSU): ORISS a new tool for high precision measurements
14:09 - 14-22 Kerim Gulyuz (MSU): Penning trap mass spectrometry at the LEBIT facility
14:22 - 14:35 Matthew Redshaw (CMU): Status and outlook of CHIP-TRAP
14:35 - 14:48 canceled
14:48 - 15:01 Xueying Huyan (MSU): Toward a measurement of weak magnetism in ^{6}He decay
15:01 - 15:14 Paul Voytas (Wittenberg U.): Beta spectroscopy in of ^{14}O
15:14 - 15:30 Discussion

The group covers wide range of areas in nuclear physics and employs variety of experimental techniques.

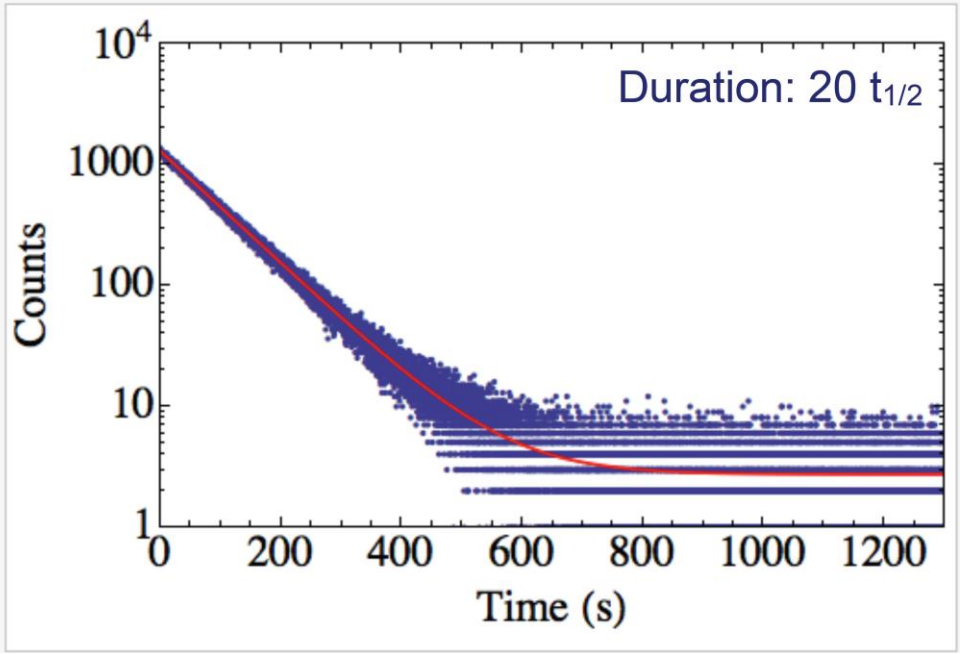
Physics discussed:

- test of the Standard Model
  - unitarity of CKM matrix
  - weak magnetism
  - Fierz interference term
  - EDM
  - Q-value for neutrino physics
- Nuclear Structure
  - charge radii, evolution of shell structure
  - nuclear mass (input to many regions of physics)

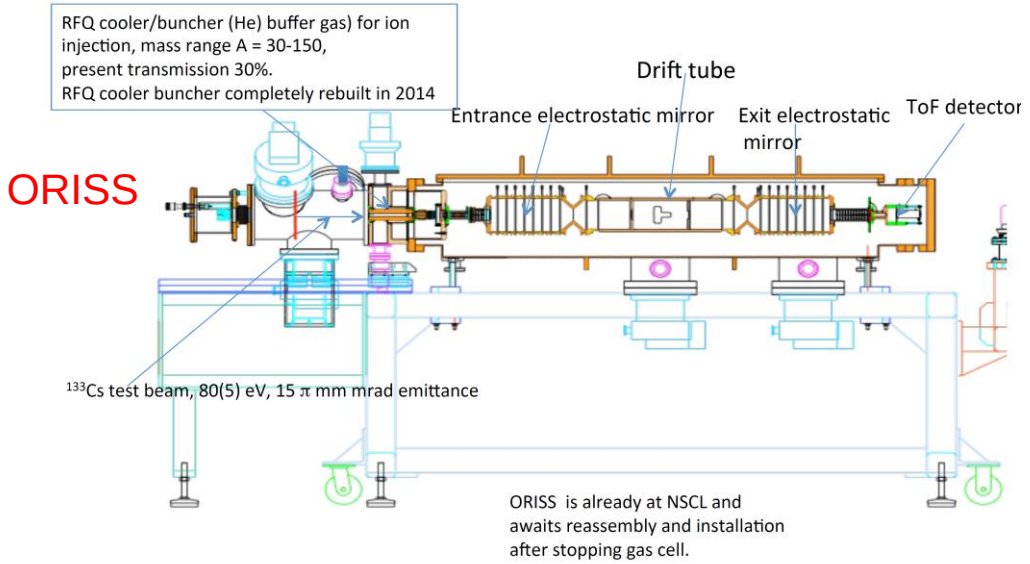
Experimental technique:

- tape station lifetime measurements
- collinear laser spectroscopy
- multi-pass time-of-flight mass spectrometry
- penning trap mass spectrometry
- beta-energy calorimeter
- beta-energy spectrometer
- beta-decay angular correlation
- laser trap
- Paul trap

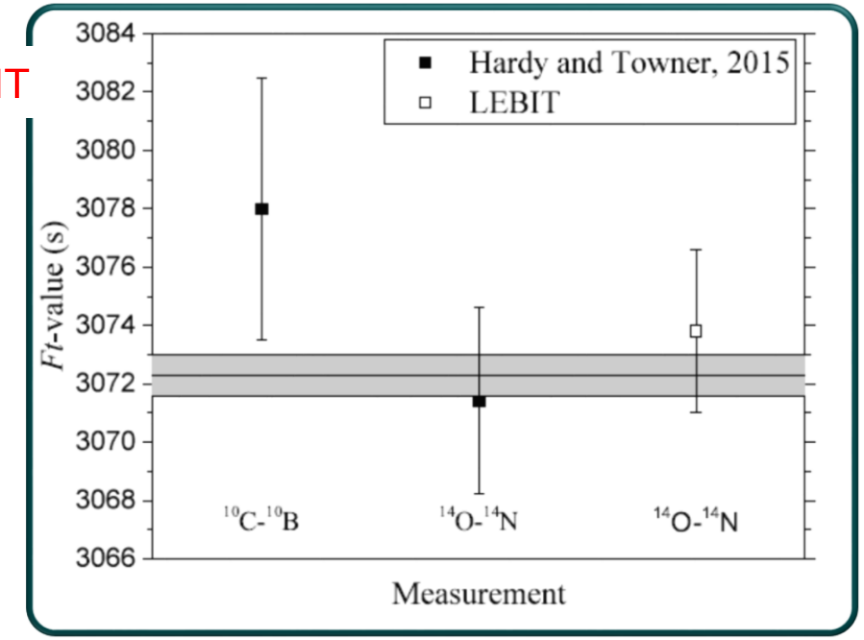
^{17}F lifetime measurements at Notre Dame



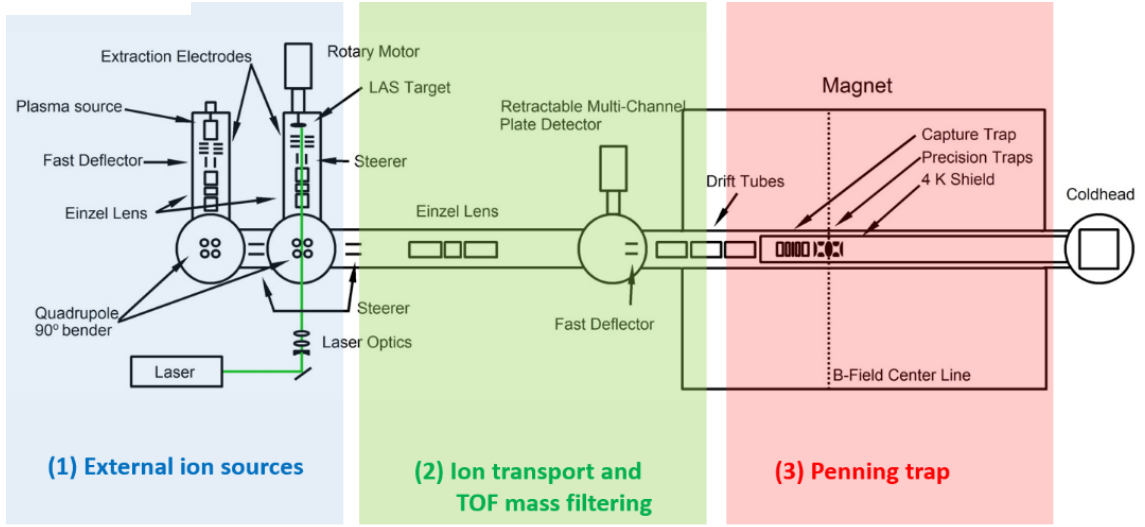
ORISS



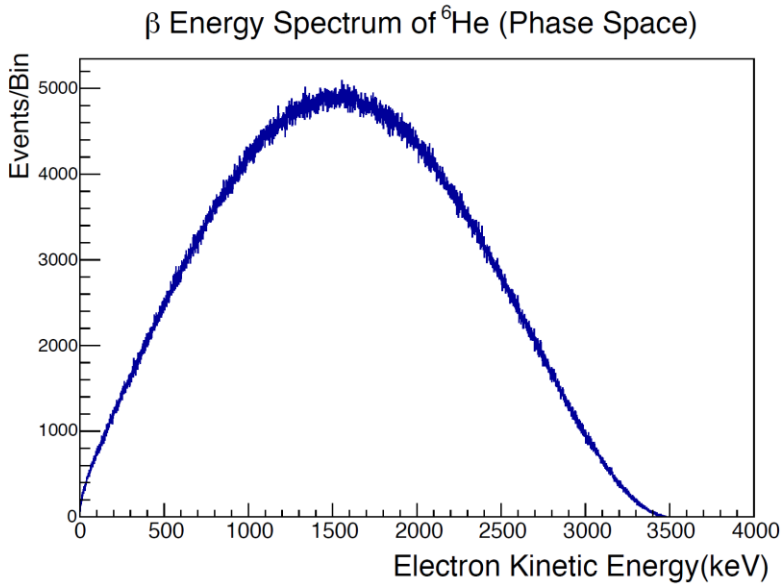
LEBIT



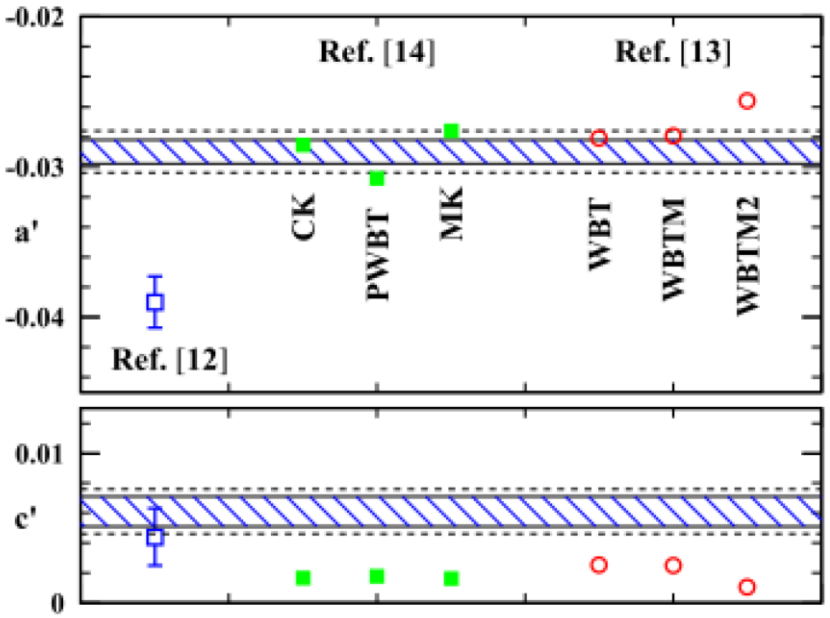
CHIP-TRAP



^{6}He Weak magnetism



^{14}O Weak magnetism



BECOLA