Abstract Submitted
for the DAMOP14 Meeting of
The American Physical Society

Tritium Helium-3 Mass Difference[1] EDMUND MYERS, ANKE WAGNER, HOLGER KRACKE, BRIDGET WESSON, Florida State University — By trapping and manipulating pairs of ions in a cryogenic Penning trap we are measuring the cyclotron frequency ratios $HD^+/^3He^+$ and HD^+/T^+. From these ratios a more precise value for the atomic mass difference between T and ^{3}He, and hence the Q-value of tritium beta-decay can be derived. This will enable a strong test of the systematics in the large-scale tritium beta-decay spectrometer KATRIN, which aims for a ten-fold improvement in the laboratory measurement of the electron neutrino mass.

[1]Supported in part by NSF and NIST

Edmund Myers
Florida State University

Date submitted: 23 Jan 2014 Electronic form version 1.4