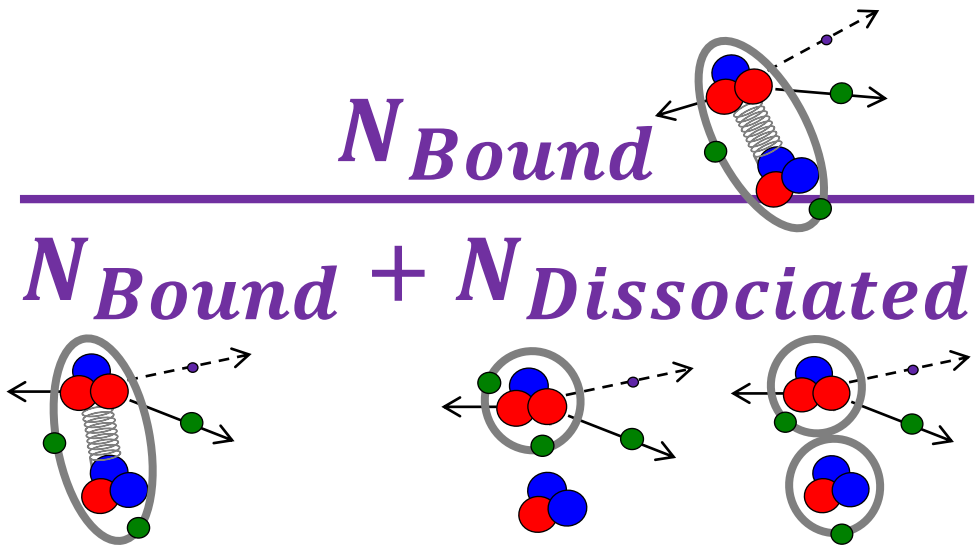
#6
(Poster No.)

TRIMS Tritium Recoil-Ion Mass Spectrometer

Ying-Ting Lin for the TRIMS collaboration

The theory, needed to analyze the neutrino-mass data from molecular tritium (T_2) sources, disagrees with past experiments that measured the beta-decay final-state branching-ratio P_{Bound}.

$$P_{Bound} = \frac{N_{Bound}}{N_{Bound} + N_{Dissociated}}$$



	Theory	Wexler Experiment*	Snell Experiment*
$P_{Bound}(T_2)$	0.39-0.57	0.945 ± 0.006	
P_{Bound}(HT)	0.55-0.57	0.895 ± 0.011	0.932 ± 0.019
*cannot be directly compared to theory	*S. Jonsell, A. Saenz, P. Froelich, PRC **60**, 034601 (1999)*	*S. Wexler, J. Inorg. Nucl. Chem. **10**, 8 (1959)*	*A. V. Snell, F. Pleasonton, H. E. Leming, J. Inorg. Nucl. Chem. **5**, 112 (1957)*

Physics Data (T_2, HT mixture): Energy vs TOF