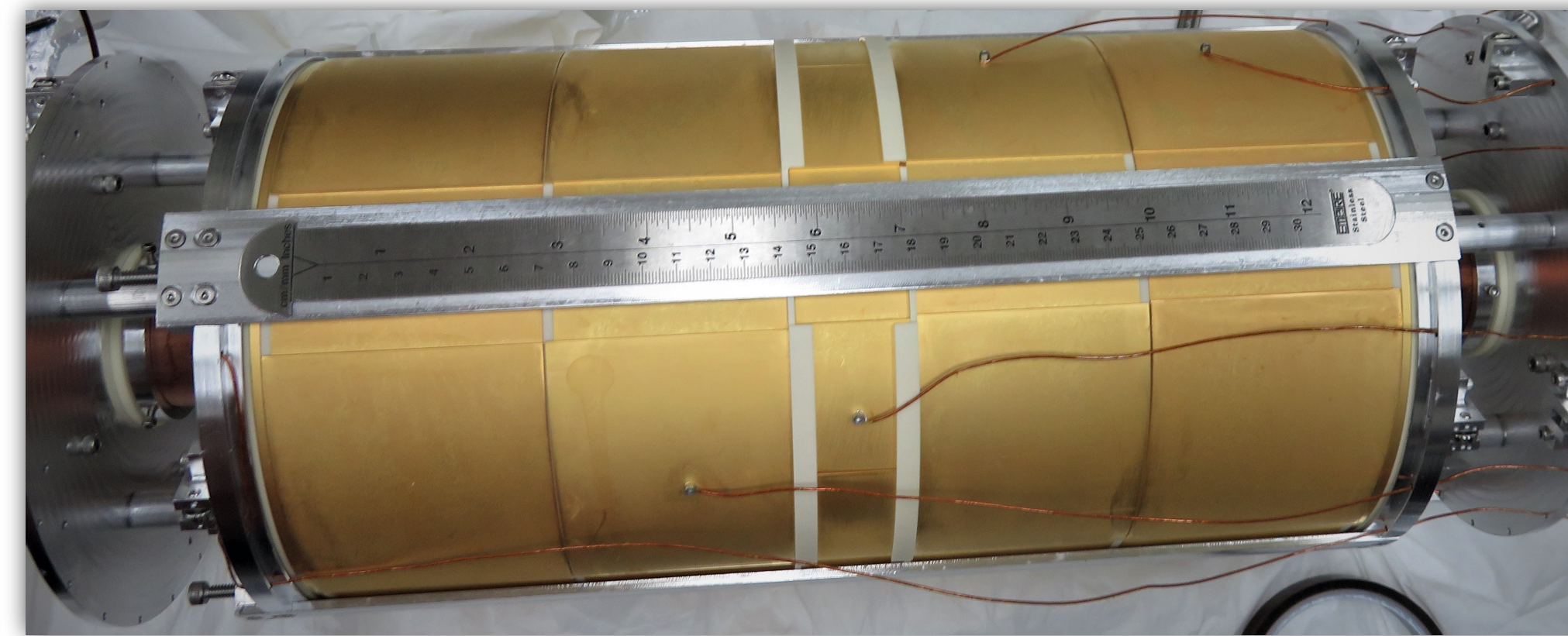
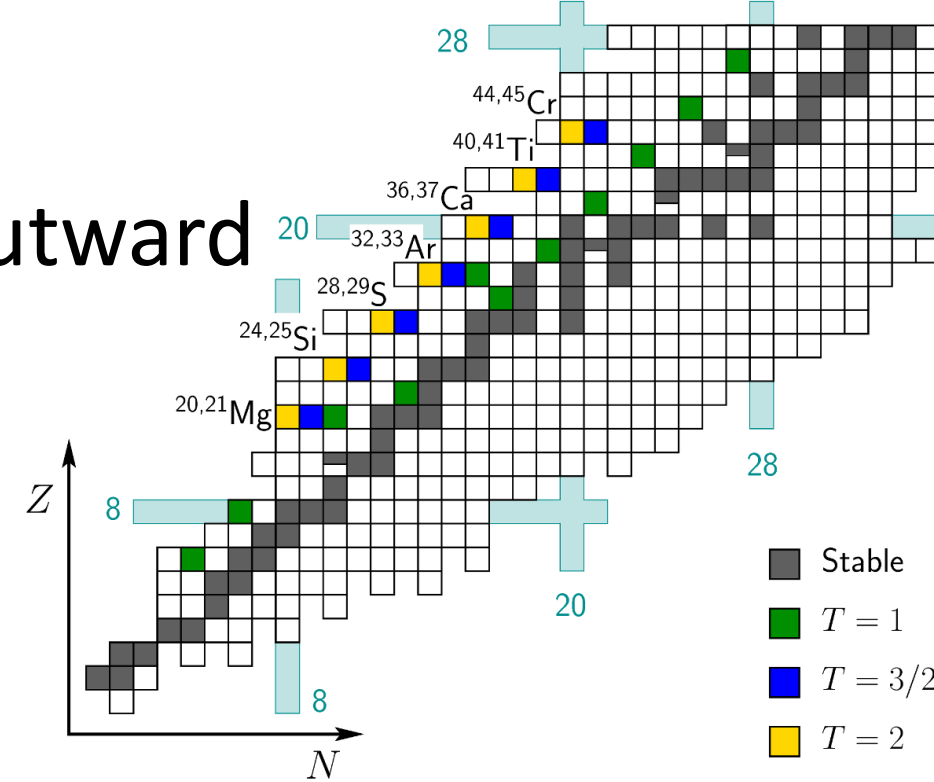


# Commissioning the Texas A&M University Penning Trap via Offline Mass Measurements

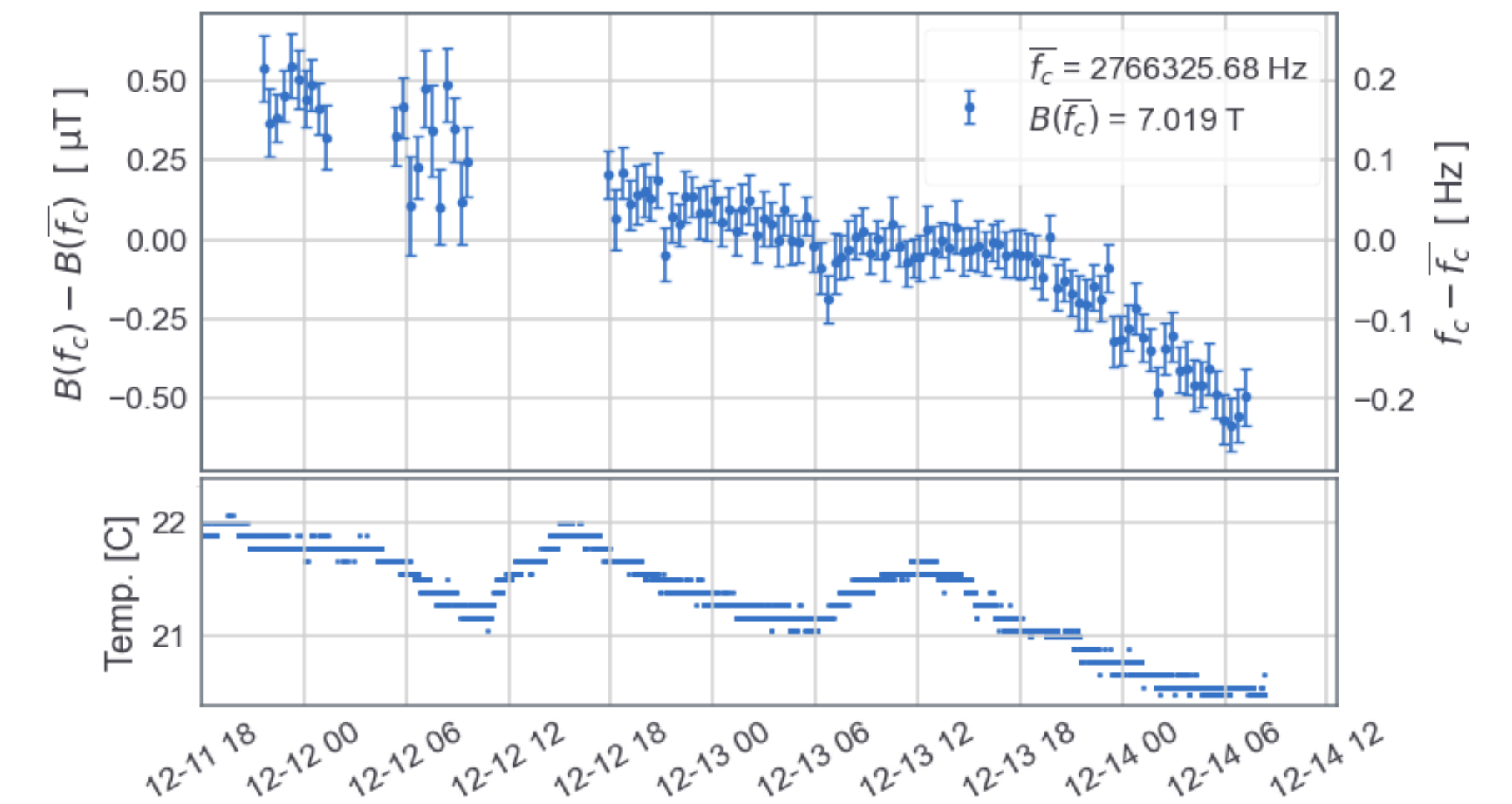
M. Nasser, G. Chubarian, V.E. Iacob, V.S. Kolhinen, D. McClain, D. Melconian, A. Ozmetin, B. Schroeder, P.D. Shidling

## Motivation

- Probe the standard model via  $\beta$ -delayed proton measurements
- Move trapped ions outward to minimize losses
- Commissioning through TOF-ICR

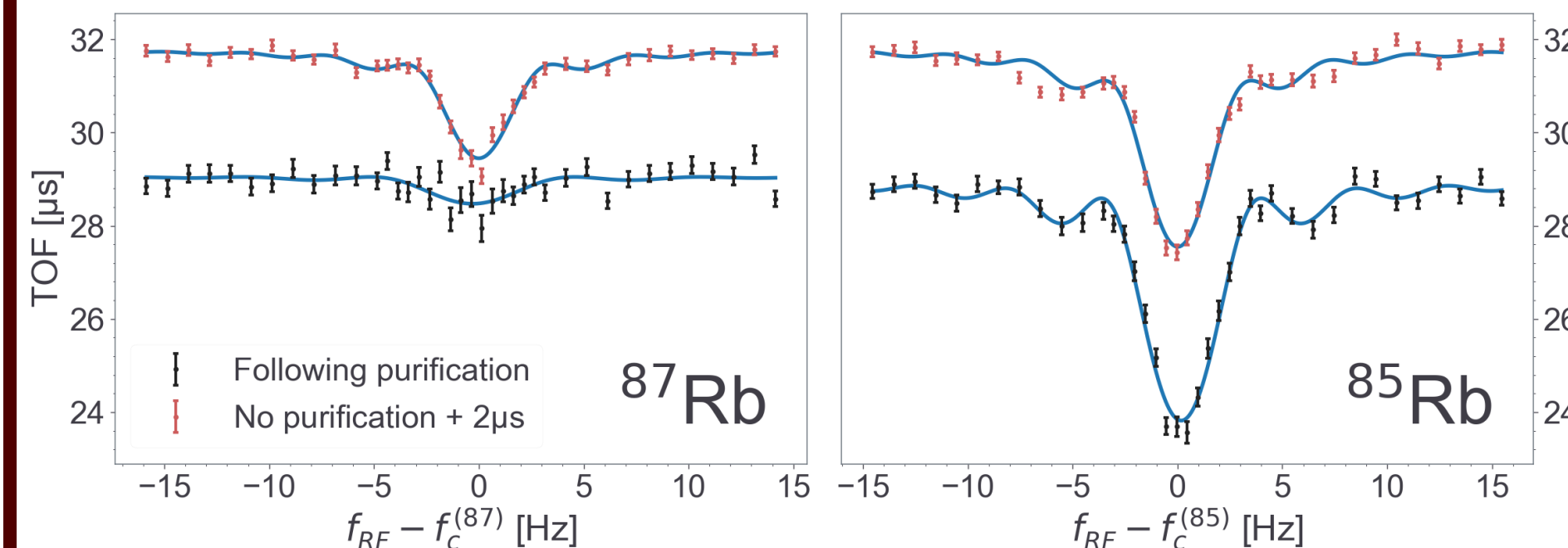


## Field Drifts



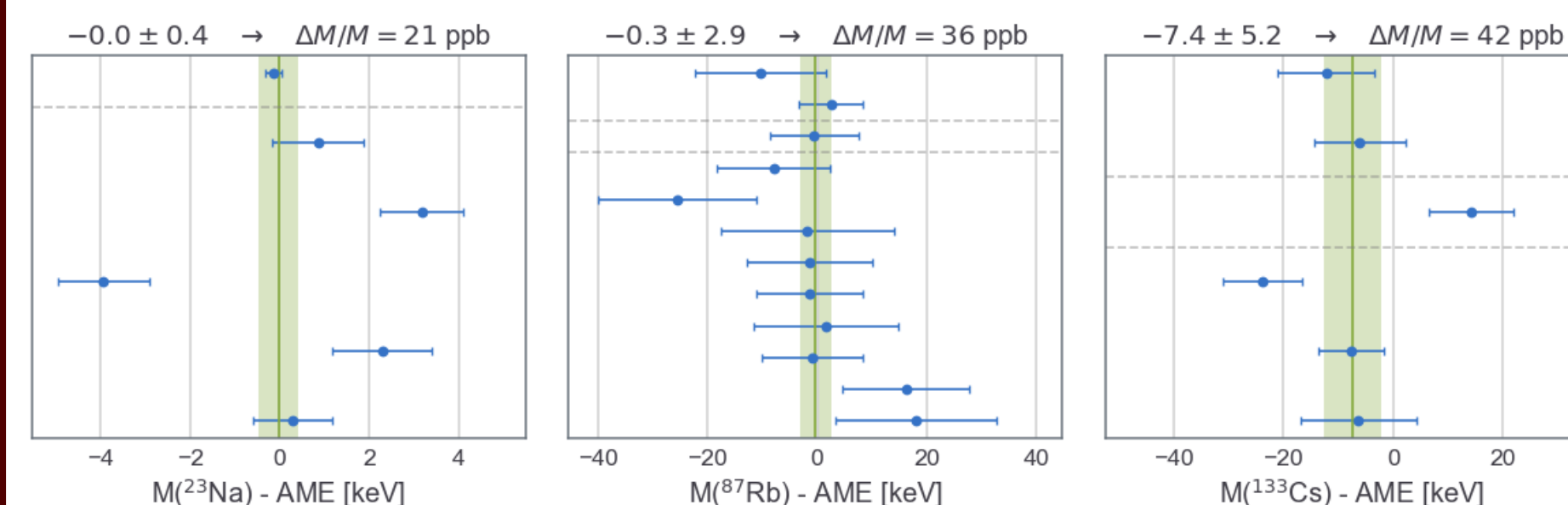
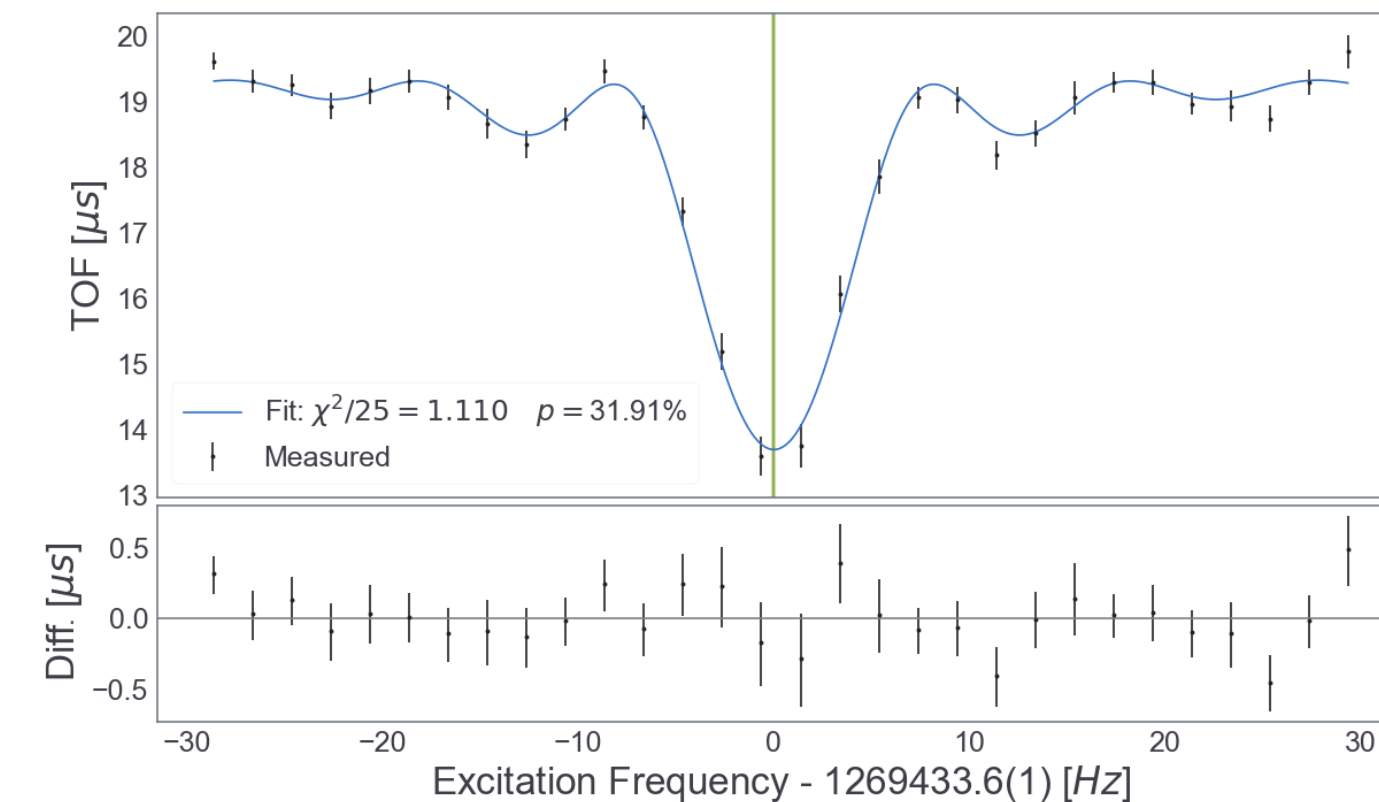
- Magnetic field drifts over time
- As suspected, resonance frequency and temperature are correlated

## Isotopic Mass Separation



- Both purification and measurement trap
- $^{85}\text{Rb}$  Region, Amplitude:  $4.3(4)\mu\text{s} \rightarrow 5.2(3)\mu\text{s}$
- $^{87}\text{Rb}$  Region, Amplitude:  $2.3(2)\mu\text{s} \rightarrow 0.6(4)\mu\text{s}$

## Mass Measurements



## Conclusions

- Can properly manipulate ion motions
- Comparable precision to other TOF-ICR mass measurements
- Upcoming Ramsey excitation scheme will further improve precision