

# Energy Measurement

Nathaly

# Goal

- Measure the beam energy using the elastic data of Tritium, Helium and Hydrogen.
- Compare the result with the Arc measurements.

BEAMLINE				ENERGY	
	MBSY1C	Set	1168.49		
Current	48.446	MeV	1168		
BdL	291705	dp/p	-2e-05		
BPM A	X 1.126	Y	1.778		
BPM B	X 1.134	Y	1.788		
	On	FB ON	RF Off		
E Mode ABS	RMS beam motion (um)		108		

Accelerator Reported Energy

# LHRS Momentum

The screenshot shows a control interface for the LHRS Momentum system. It includes a 'LEFT' header, a 'FIELDS' section with a copy icon, a 'P0 (GeV/c)' section with a copy icon, a 'POL' section with a copy icon, and a 'HELIUM' section with a copy icon. The main table displays parameters for components Q1, Q2, D-N, D-G, and Q3. At the bottom, there is a 'P0 SET' field with a value of 1.12800 (GeV/c) and a 'Lead Flow Capacity' field with a value of 0.000.

	FIELDS		P0 (GeV/c)	POL	I (A)	L(%)	FLW (l/m)
Q1	-0.39140	T	1.1278		235.303		
Q2	0.25550	T	1.1279	N	485.67	90.2	82.5 82.0
D-N	L 0.4175893	T	1.12799	N	374.10	89.7	82.7 82.7
D-G	-0.40210	T					
Q3	-0.22659	T	1.1279	N	449.02	89.9	107.9 106.3

P0 SET: 1.12800 (GeV/c)

Lead Flow Capacity: 0.000

Using Nilanga's central LHRS momentum calculation. JLAB-TN-01-049

Run by Run check:

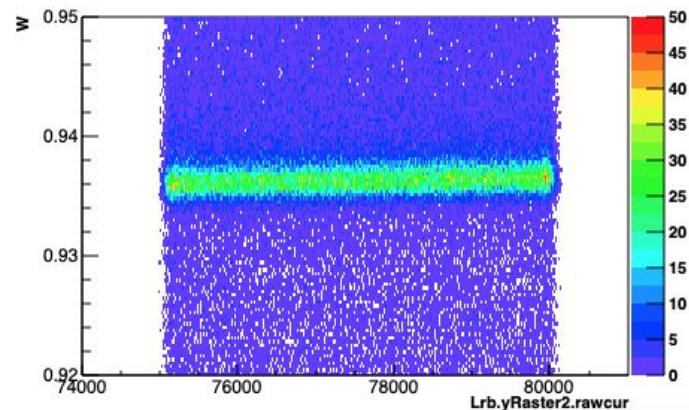
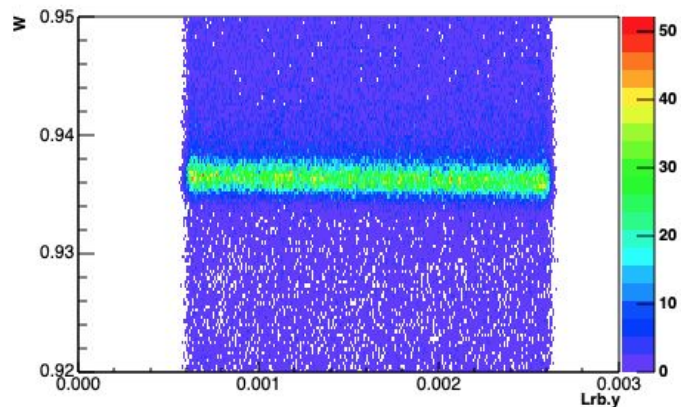
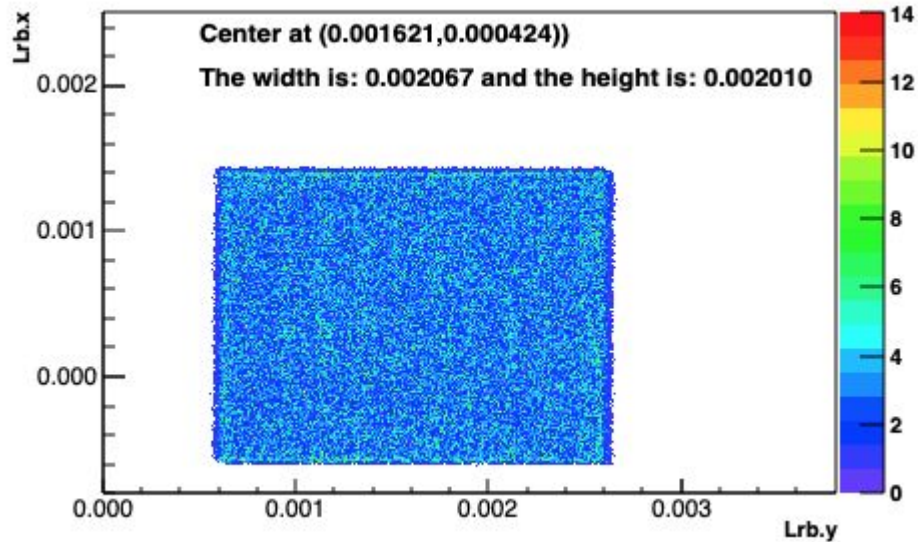
Hydrogen: P0 = 1.1283 GeV

Tritium: P0 = 1.1283 GeV

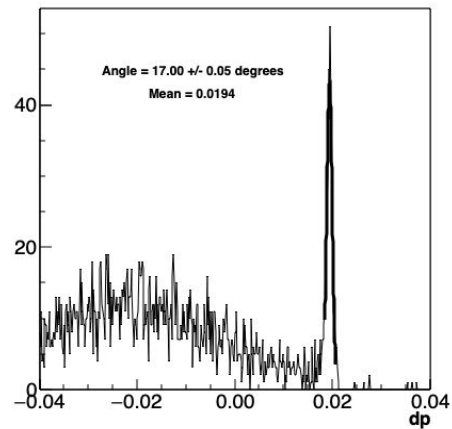
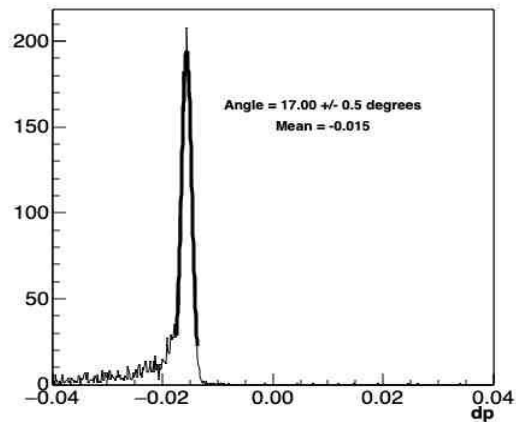
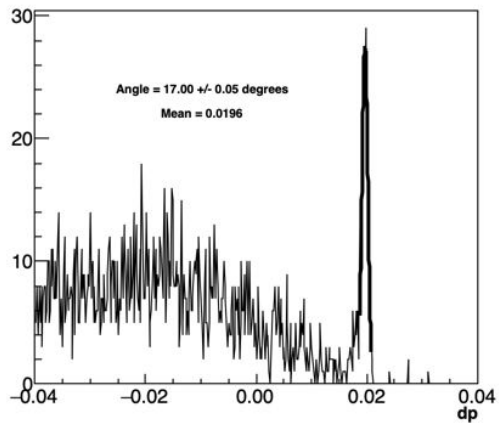
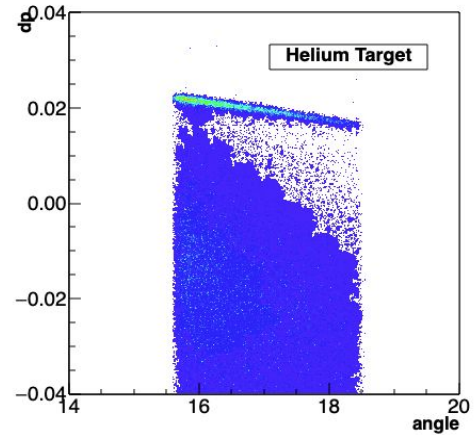
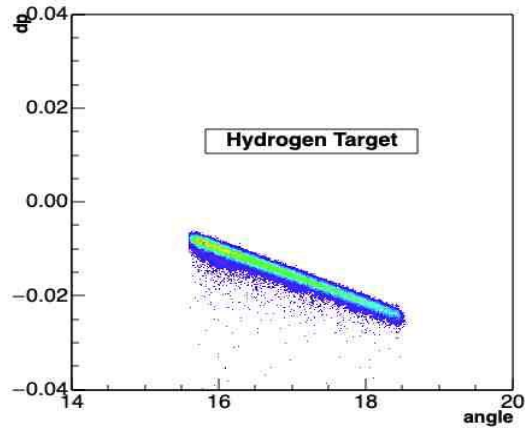
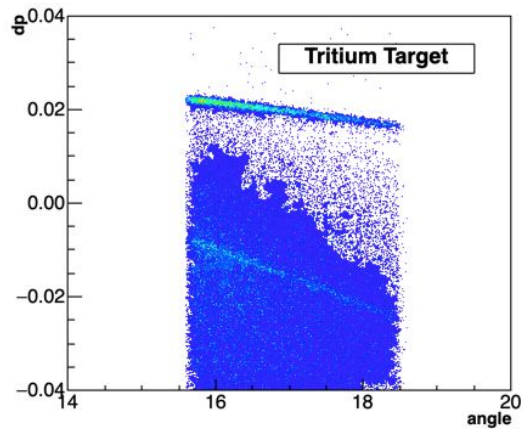
Helium: P0 = 1.1283 GeV

# Raster Check

Using a preliminary raster calibration provided by Shujie.

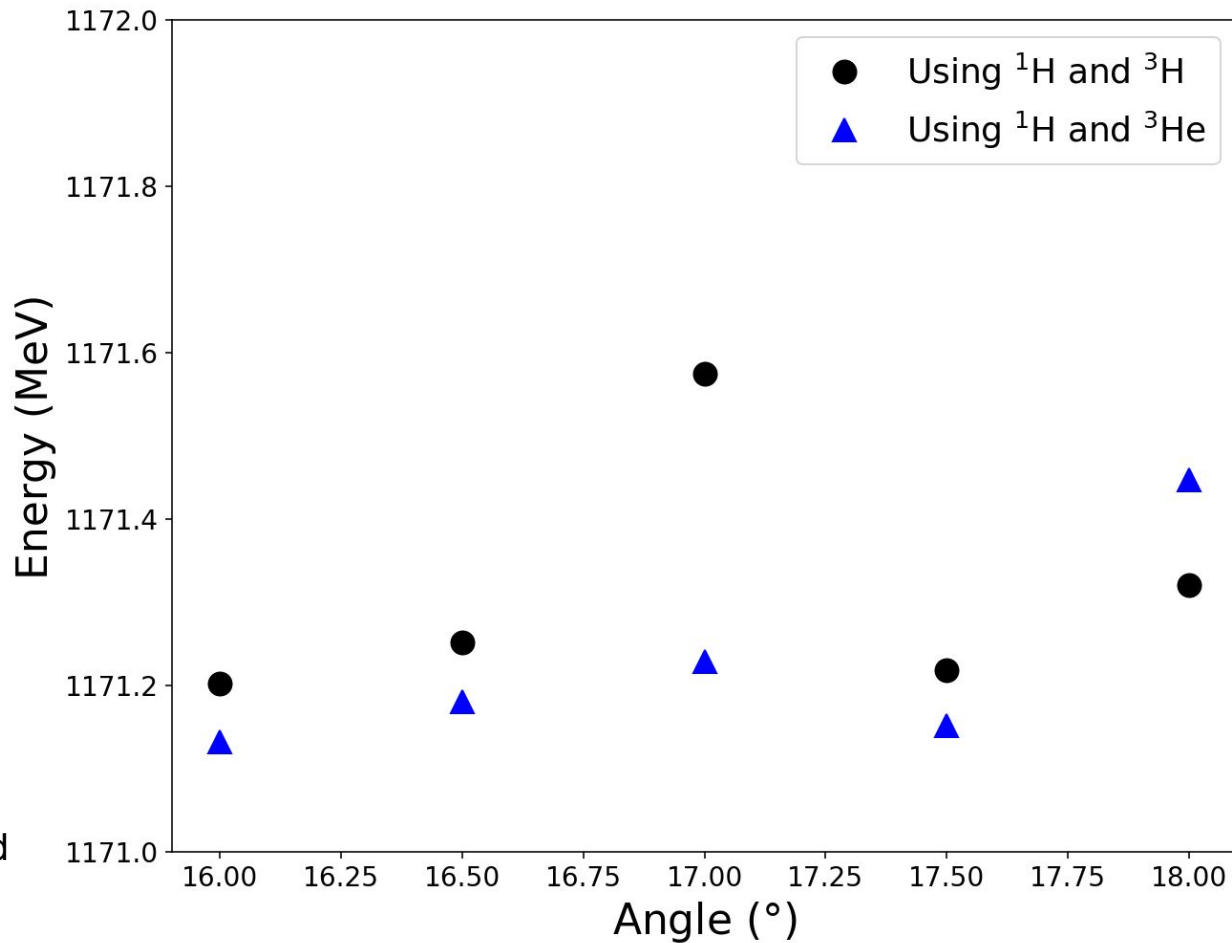


Courtesy of Shujie Li



# Beam Energy

No Energy Loss considered



## Next...

Implement the energy loss corrections.

Any suggestions?