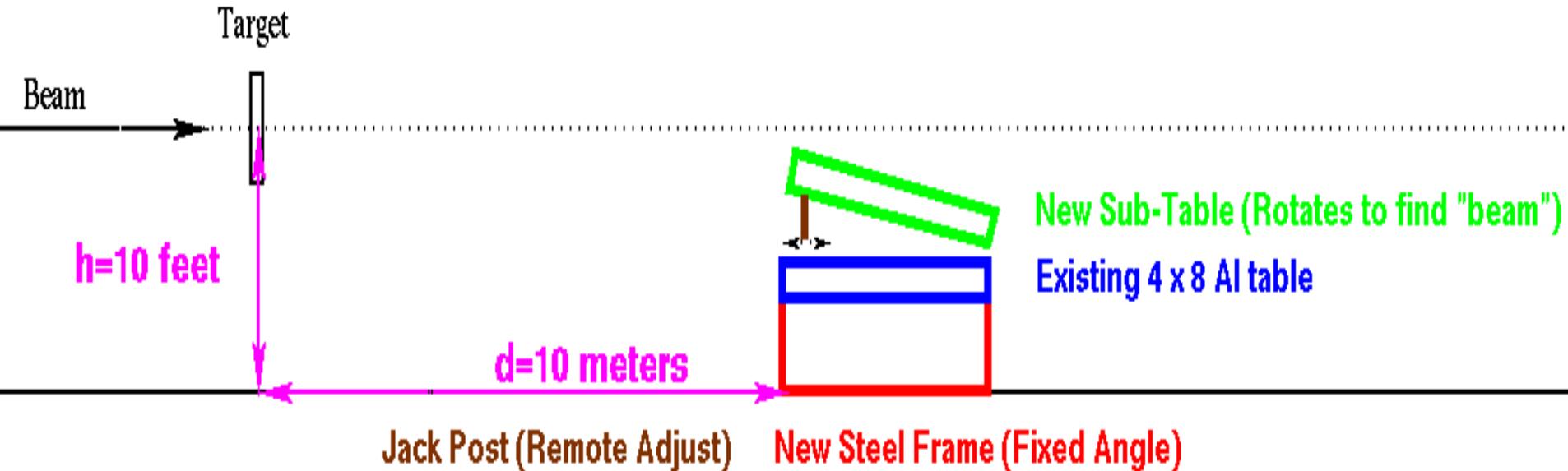


Progress/Status on Cherenkov Beam Test

TK Hemmick

Reminder: Spring Test Config



- “Beam” consists of scattered electrons & pions.
- Particles must be “collimated”.
- Need to point detector at target.
- Slide jack post back&forth via remote control.

Reminder: Layout



Write a review

Compare \$59.99

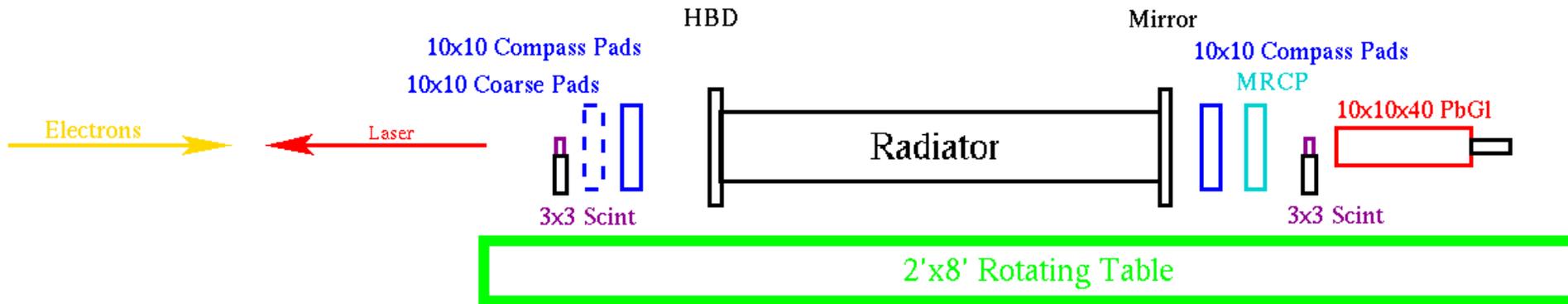
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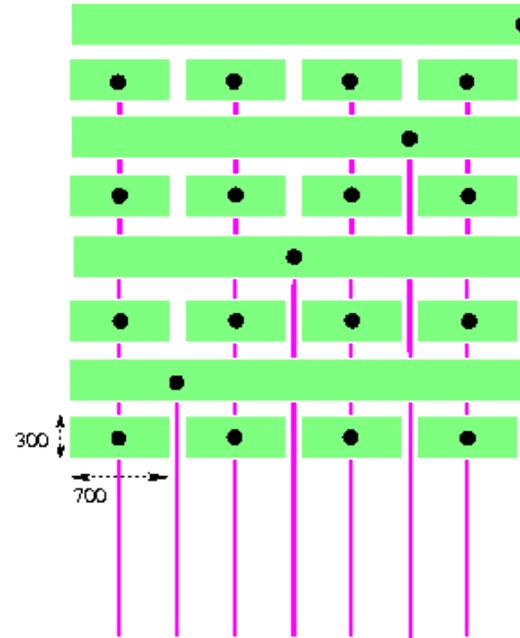
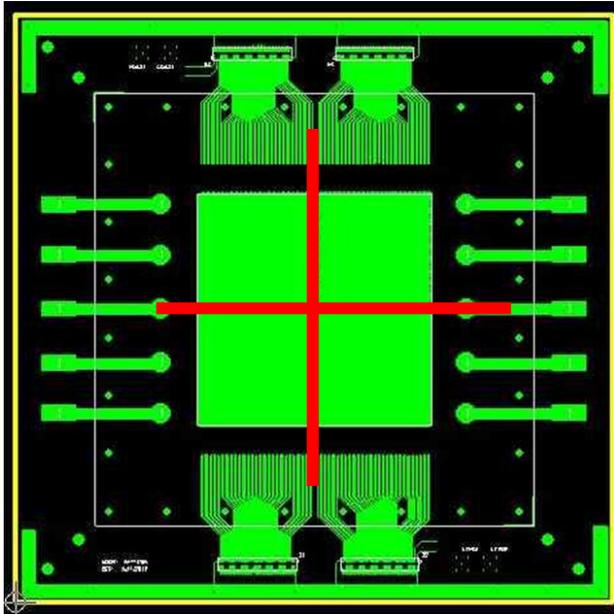
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- All aboard!
- Quintuple GEMstack (can always “shrink”).
- Need trackers to know each particle’s trajectory.
- PbGI is used to identify electrons.
- Bore site laser for initial alignment.
- Coarse pads in case scintillators fire too fast.
- MRCP??

Reminder: Segmentation



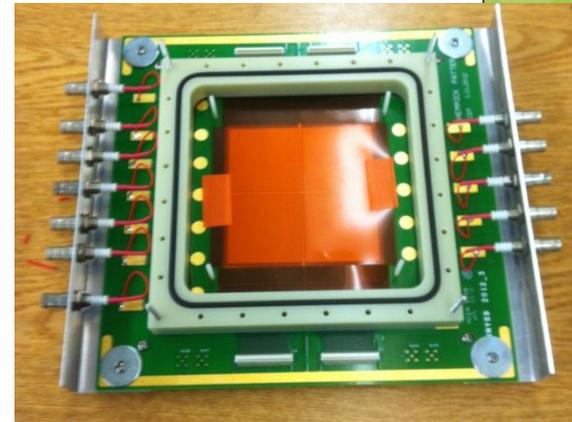
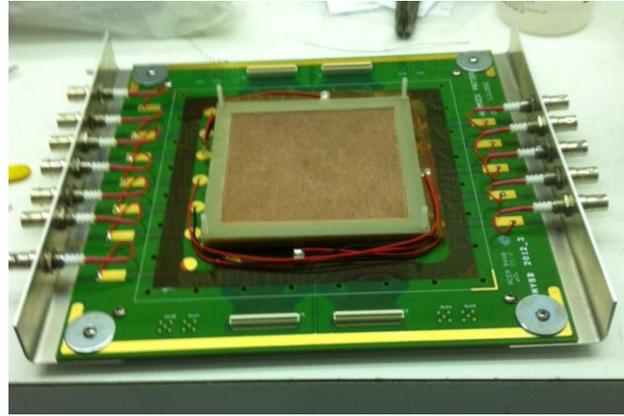
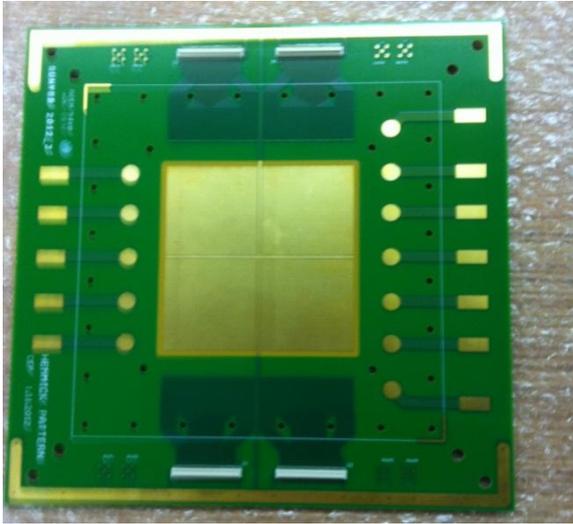
- RING images produce POSITION CORRELATION!
- Ambiguity for Compass (Cartesian) Coordinates
- SOLN: New pad plane
 - $\frac{1}{4}$ rings in four quadrants
 - STAR-style strip-pixels.

Progress: Lift Table



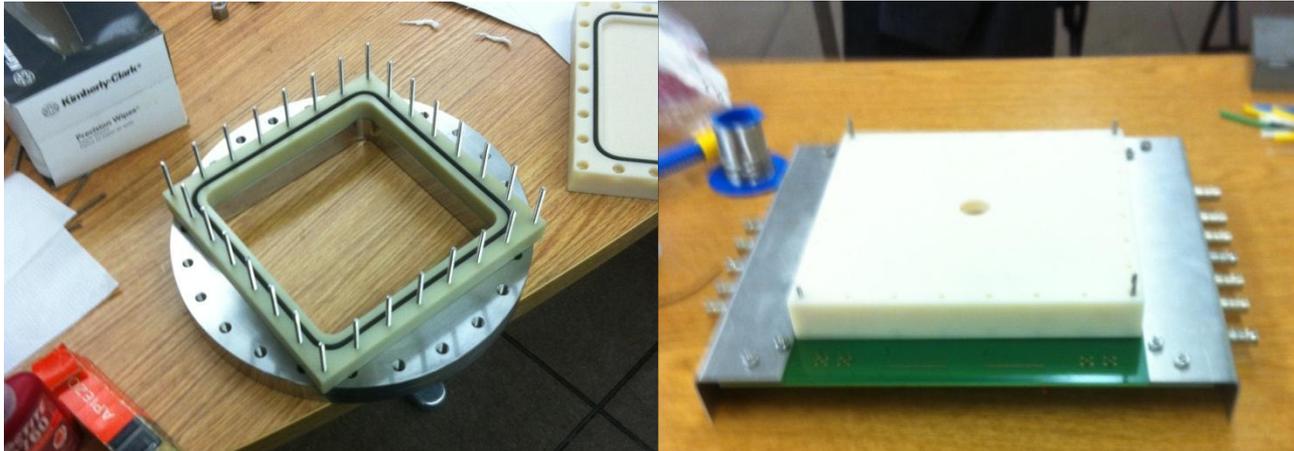
- Lift Table design: Benji Lewis (postdoc)
- Lift Table build by SBU Machinists.
- Required: ~10 degrees.
- Lifts machinist for 7 degrees and above.

Progress: Pad Plane



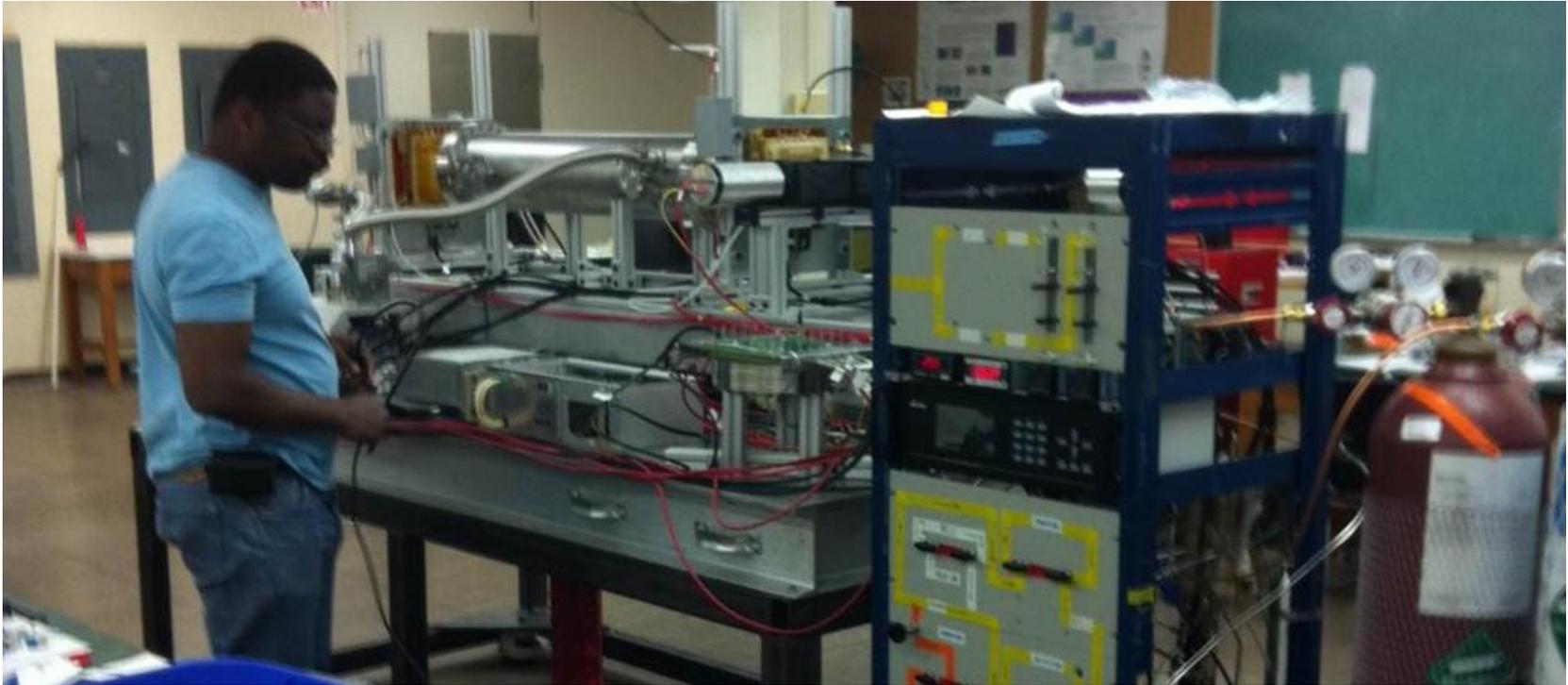
- Pad Plane Design, SBU Engineer Chuck Pancake.
- Pad Plane(s) delivered 3 weeks late.
- Good News: Pin test was free.

Pad Plane Vacuum System



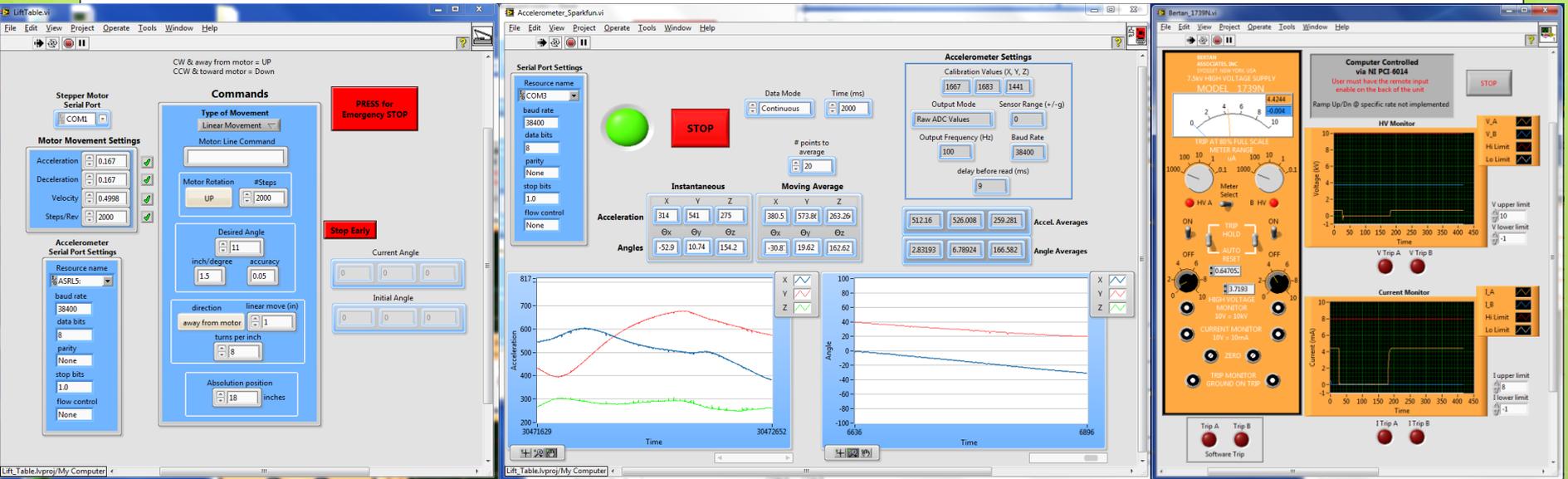
- Desire: Pump to change gas.
- Challenge: Pad plane can't withstand diff. pressure of 1 atm.
- Solution: Pump both sides using removable flange.

System Assembly



- Kondo and Kiad (UVA) bring trackers & DAQ.
- Calorimeter from M. Jones.
- Gas System running: 1 ppm O₂ 0.23 ppm H₂O

Remote Control Software

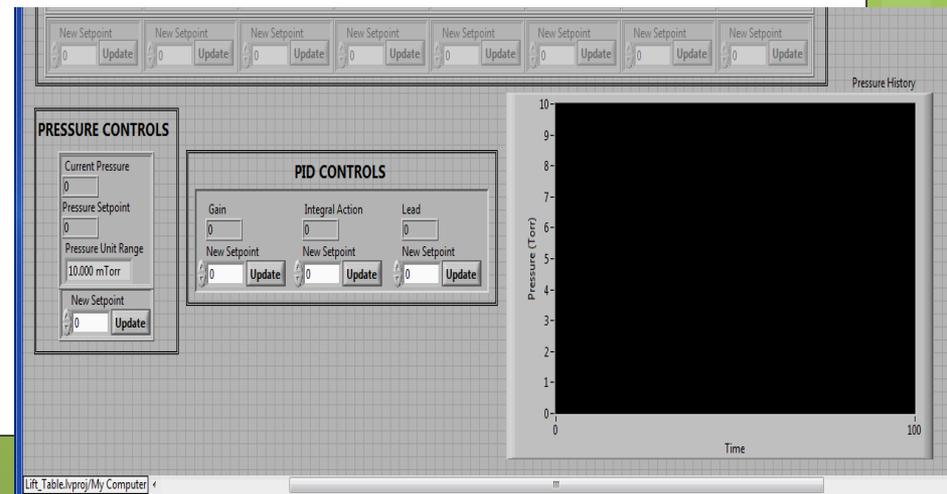


Lift Table

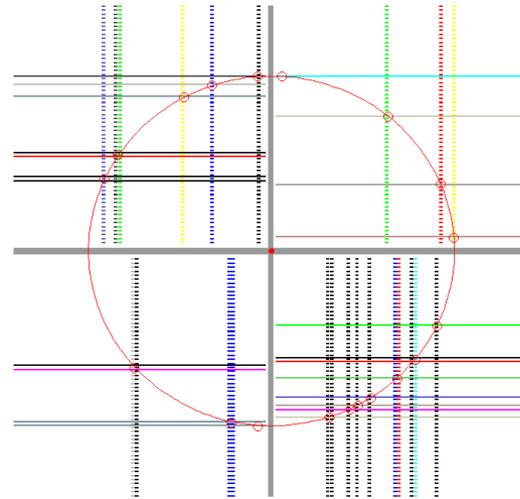
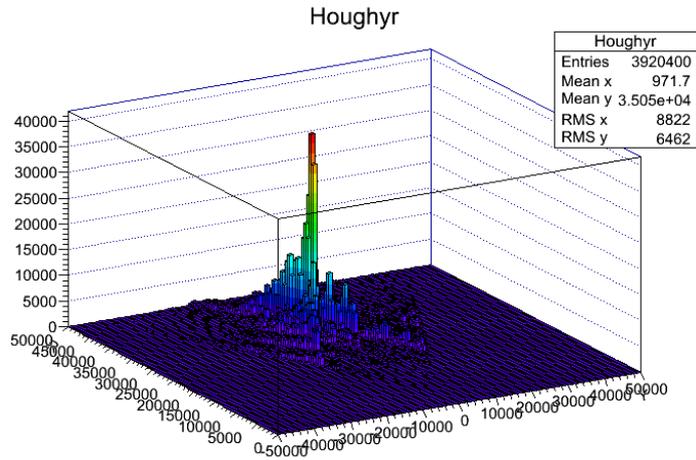
Lift Table

Tracker HV

- Author mostly Benji Lewis
- Gas System: Ben Chonigman.



Analysis Software



- Combinatorial Hough Transform:
 - Any three points define $X_{\text{center}}, Y_{\text{center}}, R$
 - Pseudo-points: all X/Y combinations in a quadrant.
 - Fill 3D histogram with X,Y,R...peak bin = ring.
- Graduate Student: Huijun Ge

What could be missing?

Mirror, Mirror

- **5 weeks** delay (substrate issues).
- Shipped Wednesday this week...
to the SBU billing address.
- No name in address: UPS can't give it to a person.
- Tell to sender:
 - Change to correct address, add two names:
Thomas K Hemmick; Thomas E Videbaek.
- TEV drove to UPS after hours:
 - TKH name there, TEV name not!
 - Begging, pleading, phone calls...
 - **MERCY! T. Videbaek was given mirrors late last night!**

Delivery: April 16

- Mirror glued in place:
24 hrs (low outgassing epoxy).
- Mirror alignment w/ laser: ½ day.
- Tube w/ mirror installed into glovebox:
 - Install ½ hr (walls must be opened).
 - Regen purifier & flush down to few ppm: 48 hrs.
- Evaporate & install CsI GEM: 24 hrs.
- Cosmic tests & travel prep: 48 hrs.

- Soonest = Middle next week.
- Travel Sunday or Monday to match Hall opening schedule.