

# Analysis Progress

for the  $d_2^n$  analysis meeting

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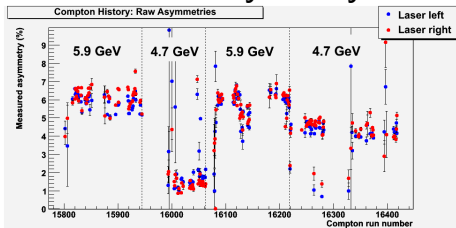
February 4, 2010

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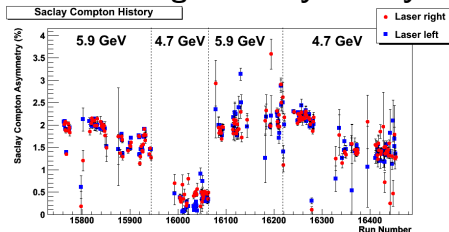
# Discrepancies in Saclay Data (i)

- Last time, we discussed some discrepancies between the Compton data taken with the Saclay and CMU DAQs
- It turns out that the Saclay data is inconsistent with itself ...

## Binwise Asymmetry



## Semi-Integrated Asymmetry



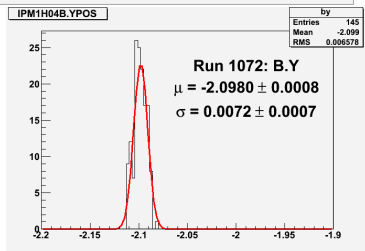
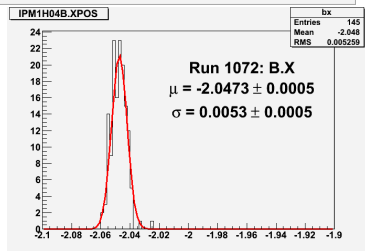
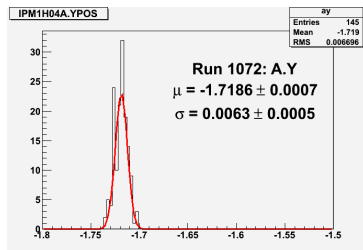
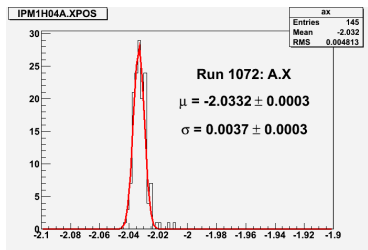
## Discrepancies in Saclay Data (ii)

- These three problem areas are probably artifacts of the analysis
  - Each is unsupported by other Saclay analysis, CMU analysis, or available Møller measurements
- I spoke with Rich Holmes about these issues
  - Both Saclay analysis methods are sensitive to gain shifts, threshold changes, pileup, etc
  - Thus, not recommended for stability checks
  - Analysis is supposed to produce a more stable polarization number
  - Polarization analysis didn't work during  $d_2^n$
- Probably not worth continuing Saclay DAQ investigation
- Gregg and Megan are working on Monte Carlo

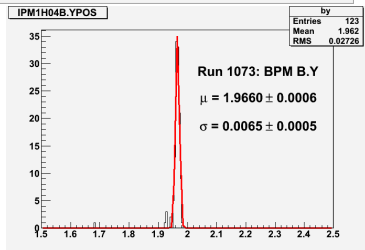
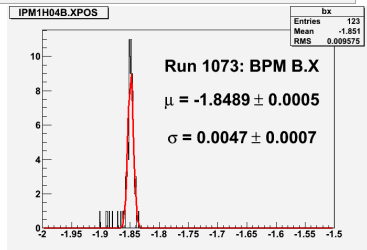
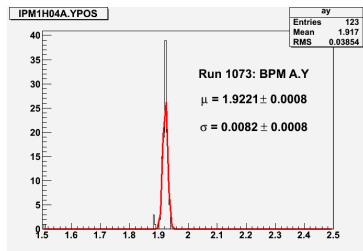
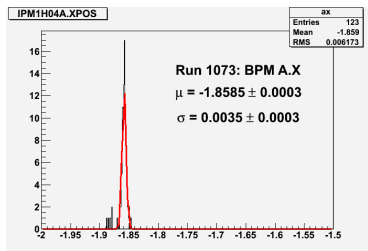
# BPM Calibration

- The BPM calibration must be done before the next stage of the BigBite optics calibrations
- BPM calibration is often done with HARP scans, but there have been problems with the coupling to the encoders
- Vince advises calibration of the bpm scalars to the EPICS variables (MCC's calibrated BPM readings)
  - Putative accuracy:  $\sim 50\mu\text{m}$  (and "no worse than  $500\mu\text{m}$ ")
- We have five BPM runs, each mapping a different point on a square:
  - (-2,-2)
  - (-2,+2)
  - (+2,+2)
  - (+2,-2)
  - (0,0)

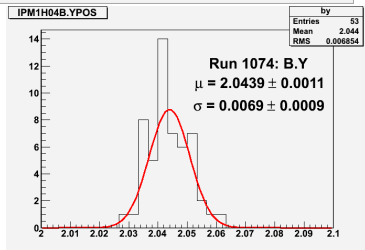
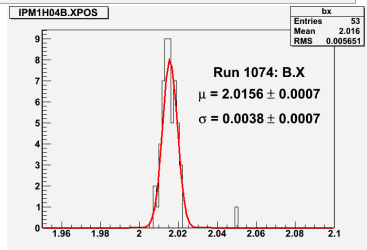
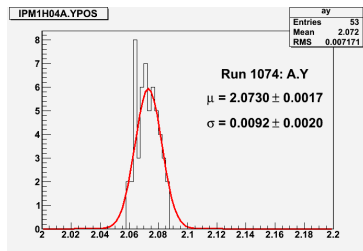
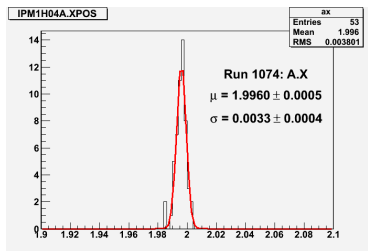
# Absolute Beam Position from EPICS Variables: (-2,-2)



# Absolute Beam Position from EPICS Variables: (-2,+2)

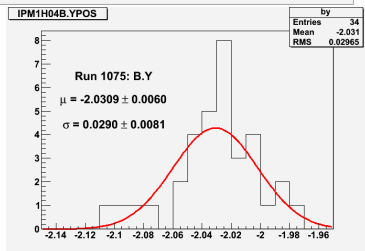
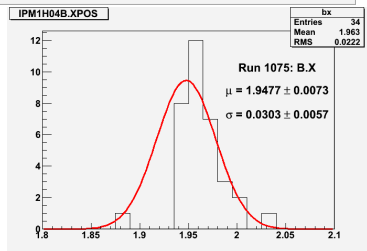
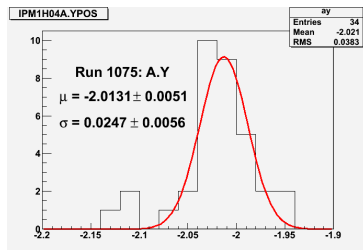
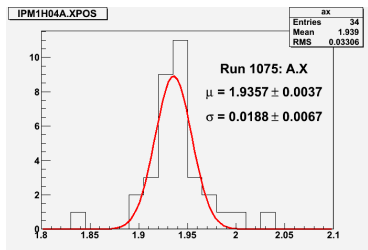


# Absolute Beam Position from EPICS Variables: (+2,+2)

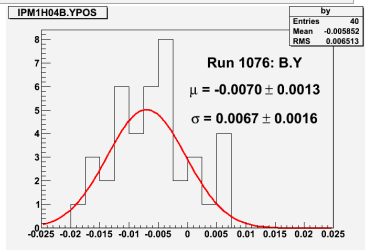
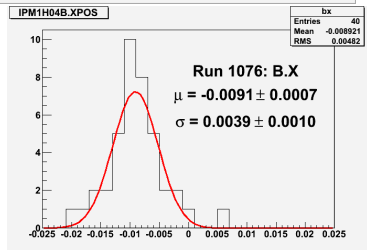
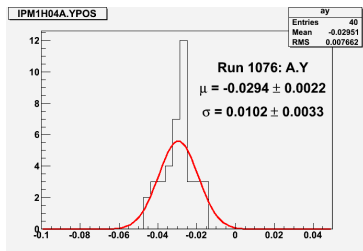
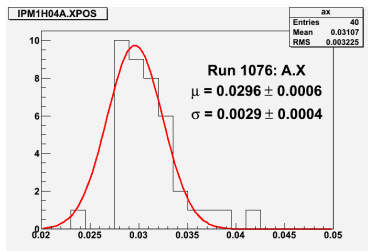




# Absolute Beam Position from EPICS Variables: (+2,-2)



# Absolute Beam Position from EPICS Variables: (0,0)



# What's Next?

- BB Optics
  - Waiting for BPM calibration
- Compton
  - Systematic errors
  - Analyzing power calibration is wrapping up
  - Talk at APS “April” Meeting
- Beamline calibrations
  - Calibrate BPM scalers (BB, LHRS) to absolute positions given by EPICS variables
  - I have some code from Vince that should help with this