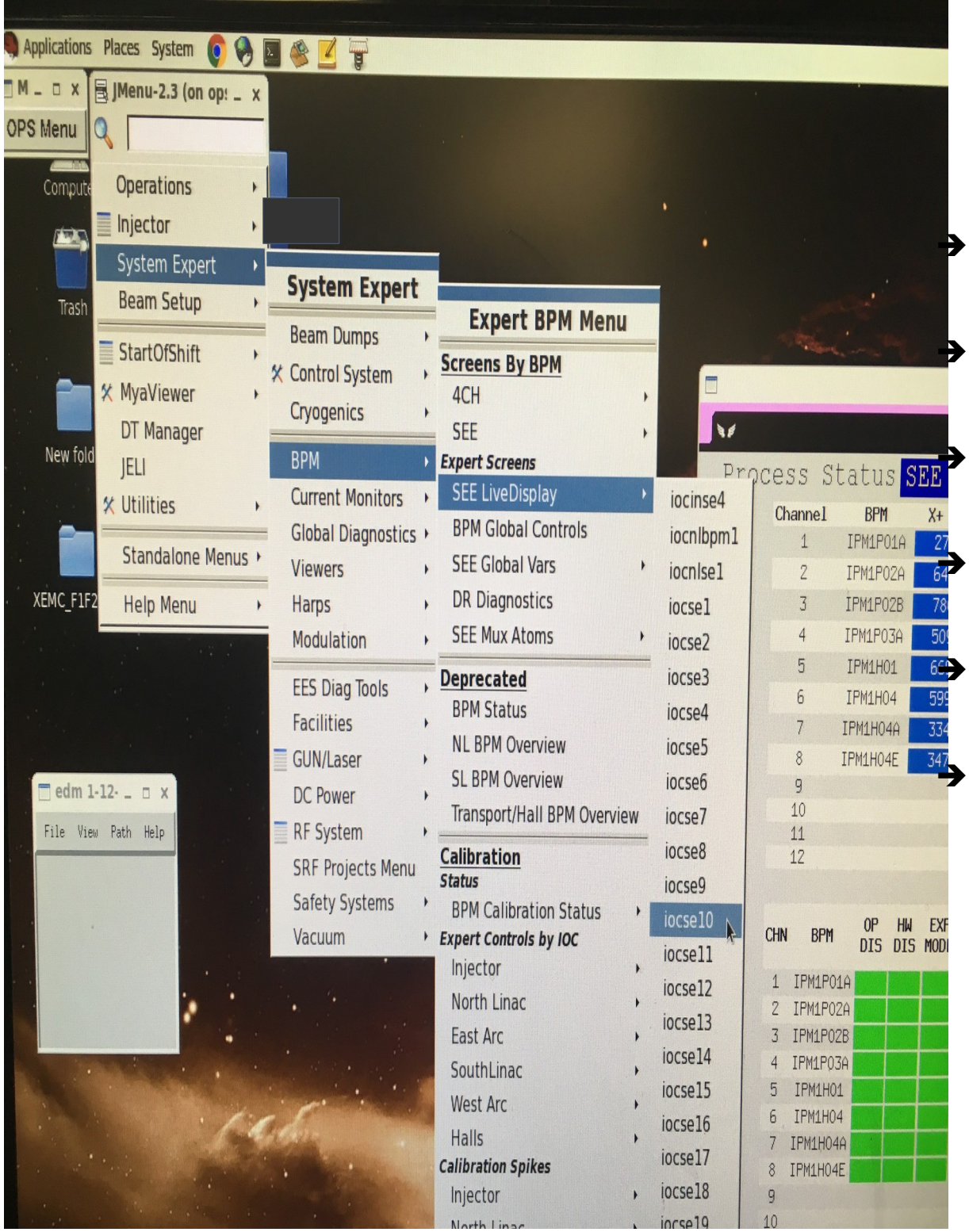
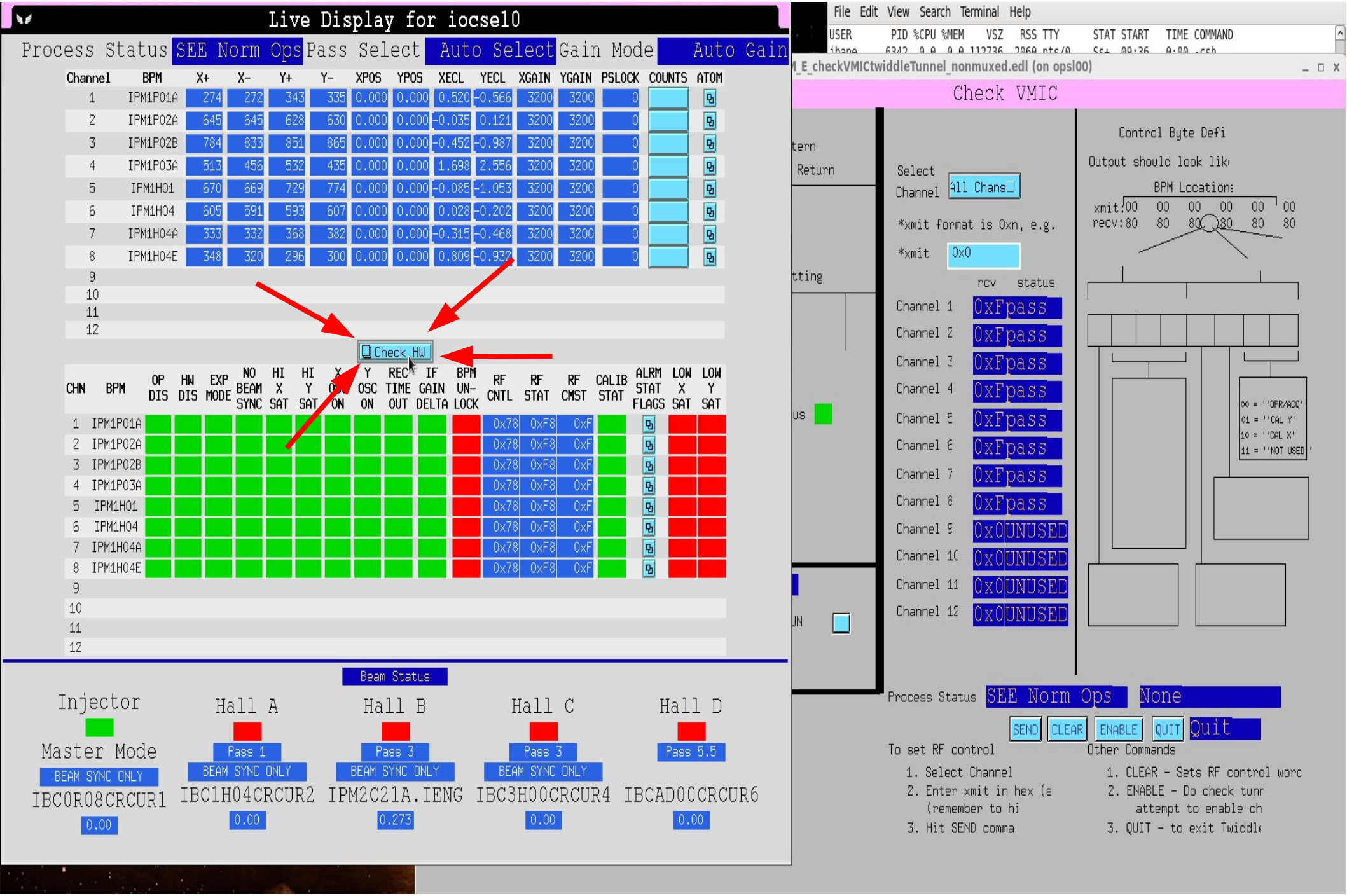
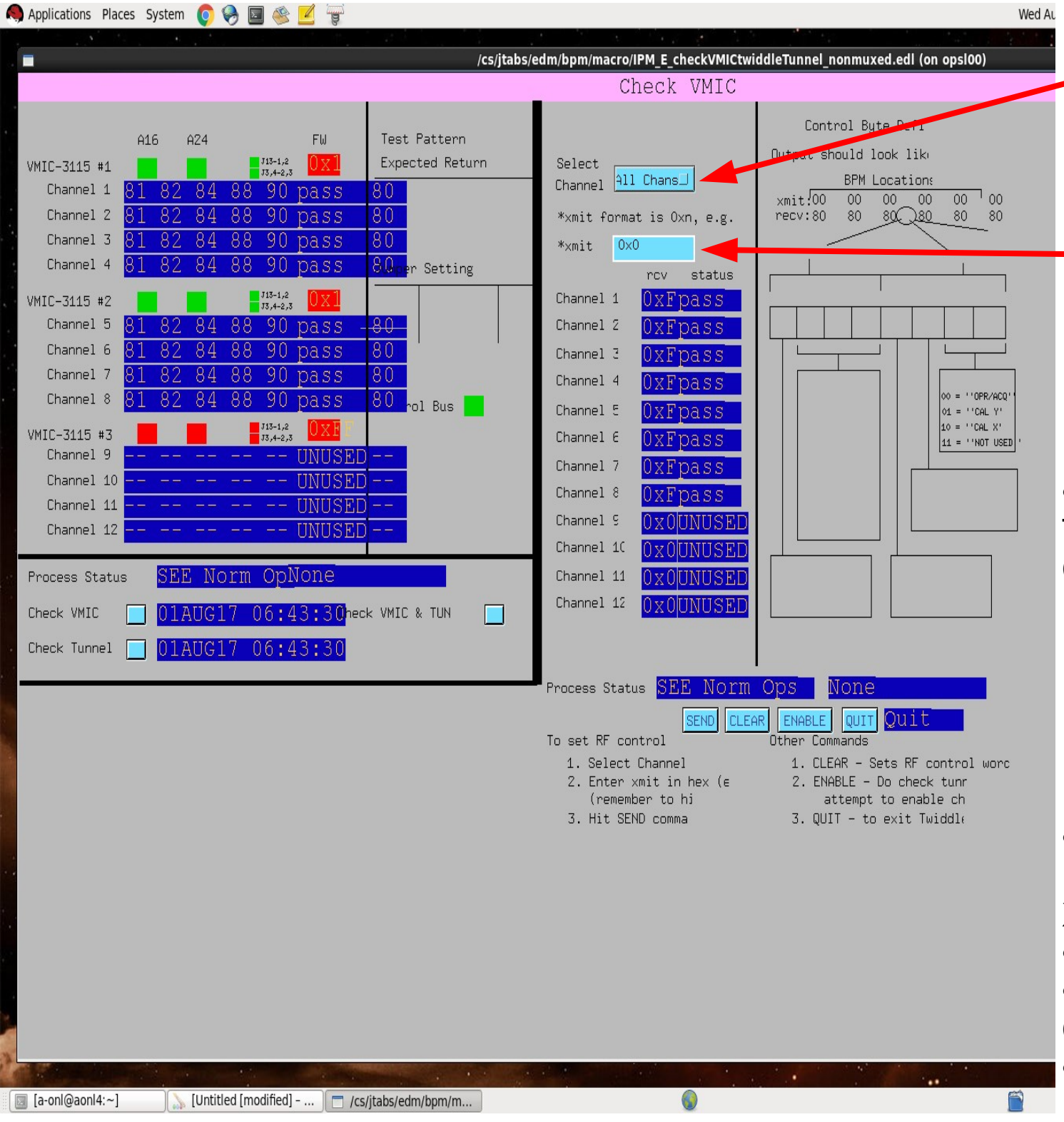
Twiddle Measurement!!

- Need an accelerator account!!
  - Complete ACE-PR
  - ssh acclogin.jlab.org accmenu ops
    - This will open the ops menu
    - Might need to download NoMachine
      - https://cebaf.jlab.org/accelerator-remote-access
  - Start up coda, with startcoda on adaq1 for LHRS and adaq2 for RHRS



- OPS menu
- Jmenu
- Select System Expert
- BPM
- SEE LiveDisplay
- icose10


Live Display for iocse10
Process Status SEE Norm Ops
Pass Select Auto Select
Gain Mode Auto Gain
Channel BPM X+ X- Y+ Y- XPOS YPOS XECL YECL XGAIN YGAIN PSLOCK COUNTS ATOM
1 IPM1P01A 274 272 343 335 0.000 0.000 0.520 -0.566 3200 3200 0
2 IPM1P02A 645 645 628 630 0.000 0.000 -0.035 0.121 3200 3200 0
3 IPM1P02B 784 833 851 865 0.000 0.000 -0.452 -0.987 3200 3200 0
4 IPM1P03A 513 456 532 435 0.000 0.000 1.698 2.556 3200 3200 0
5 IPM1H01 670 669 729 774 0.000 0.000 -0.085 -1.053 3200 3200 0
6 IPM1H04 605 591 593 607 0.000 0.000 0.028 -0.202 3200 3200 0
7 IPM1H04A 333 332 368 382 0.000 0.000 -0.315 -0.468 3200 3200 0
8 IPM1H04E 348 320 296 300 0.000 0.000 0.809 -0.932 3200 3200 0
9
10
11
12
Check HW
CHN BPM OP DIS HW DIS EXP MODE NO BEAM SYNC HI X SAT HI Y SAT X OSC ON Y OSC ON REC TIME OUT IF GAIN DELTA BPM UN-LOCK RF CNTL RF STAT RF CMST CALIB STAT ALRM STAT FLAGS LOW X SAT LOW Y SAT
1 IPM1P01A 0x78 0xF8 0xF
2 IPM1P02A 0x78 0xF8 0xF
3 IPM1P02B 0x78 0xF8 0xF
4 IPM1P03A 0x78 0xF8 0xF
5 IPM1H01 0x78 0xF8 0xF
6 IPM1H04 0x78 0xF8 0xF
7 IPM1H04A 0x78 0xF8 0xF
8 IPM1H04E 0x78 0xF8 0xF
9
10
11
12
Beam Status
Injector
Master Mode
BEAM SYNC ONLY
IBC0R08CRCUR1
0.00
Hall A
Pass 1
BEAM SYNC ONLY
IBC1H04CRCUR2
0.00
Hall B
Pass 3
BEAM SYNC ONLY
IPM2C21A.IENG
0.273
Hall C
Pass 3
BEAM SYNC ONLY
IBC3H00CRCUR4
0.00
Hall D
Pass 5.5
IBCAD00CRCUR6
0.00
File Edit View Search Terminal Help
USER PID %CPU %MEM VSZ RSS TTY STAT START TIME COMMAND
jhane 6342 0.0 0.0 112736 2060 pts/0 Ss+ 09:36 0:00 -csh
M_E_checkVMICtwiddleTunnel_nonmuxed.edl (on opsl00)
Check VMIC
tern
Return
tting
us
JN
Select Channel All Chans
*xmit format is 0xn, e.g.
*xmit 0x0
rcv status
Channel 1 0xF pass
Channel 2 0xF pass
Channel 3 0xF pass
Channel 4 0xF pass
Channel 5 0xF pass
Channel 6 0xF pass
Channel 7 0xF pass
Channel 8 0xF pass
Channel 9 0x0 UNUSED
Channel 10 0x0 UNUSED
Channel 11 0x0 UNUSED
Channel 12 0x0 UNUSED
Control Byte Defi
Output should look lik
BPM Locations
xmit: 00 00 00 00 00 00
recv: 80 80 80 80 80 80
00 = ''OPR/ACQ''
01 = ''CAL Y''
10 = ''CAL X''
11 = ''NOT USED''
Process Status SEE Norm Ops None
SEND CLEAR ENABLE QUIT Quit
To set RF control
1. Select Channel
2. Enter xmit in hex (e
(remember to hi
3. Hit SEND comma
Other Commands
1. CLEAR - Sets RF control worc
2. ENABLE - Do check tunr
attempt to enable ch
3. QUIT - to exit Twiddl



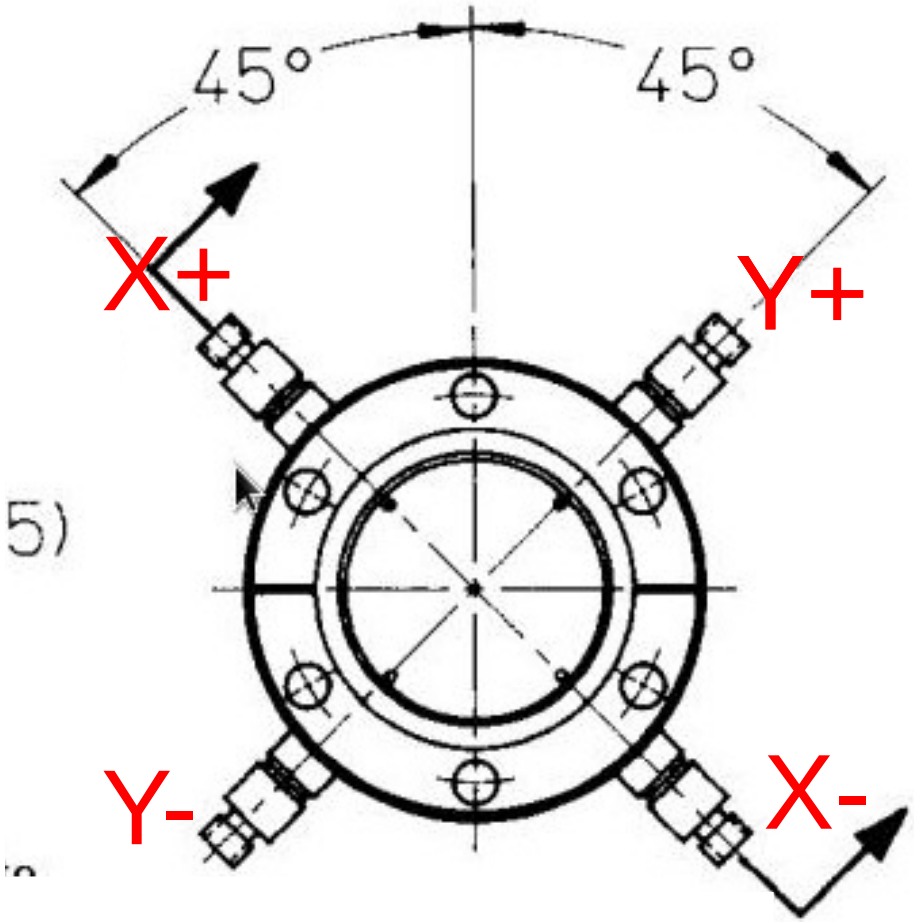
Channel 7 ->BPMA
Channel 8 ->BPMB/E

- 0x71 → X+
- 0x72 → Y+
- 0x75 → X-
- 0x76 → Y-

- Hit send to start the Twiddle measurement Change the wire has Needed, hitting send when Ready.

- Once the measurement Is complete, zero out the Xmit for all channels.
- Then hit, clear->Enable.
- Make sure that the status Changes to SEE Norm Ops
- Quit!

Twiddle!

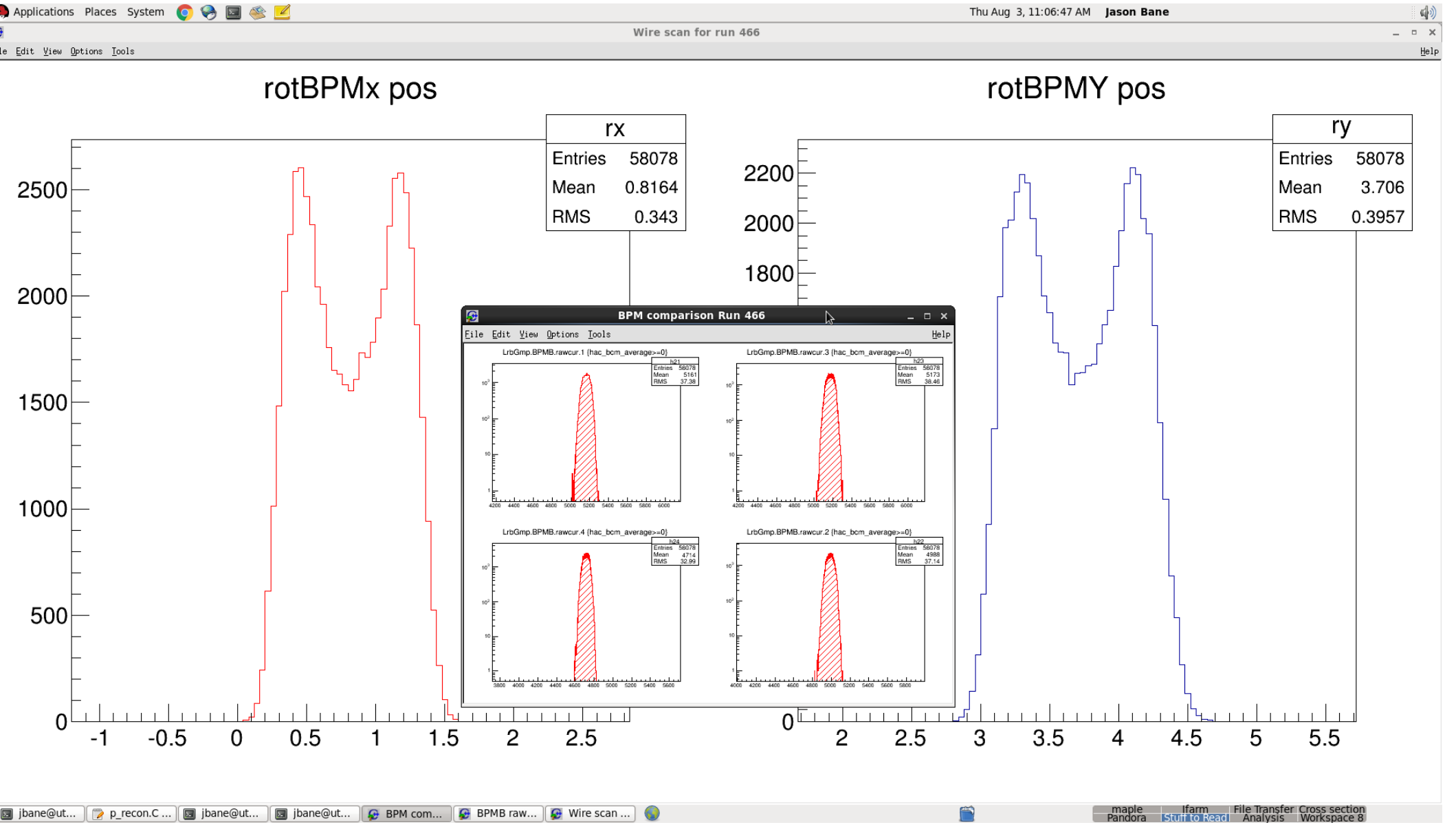


Read out the signal and
Reconstruct a position in
Axis of two adjacent wire.

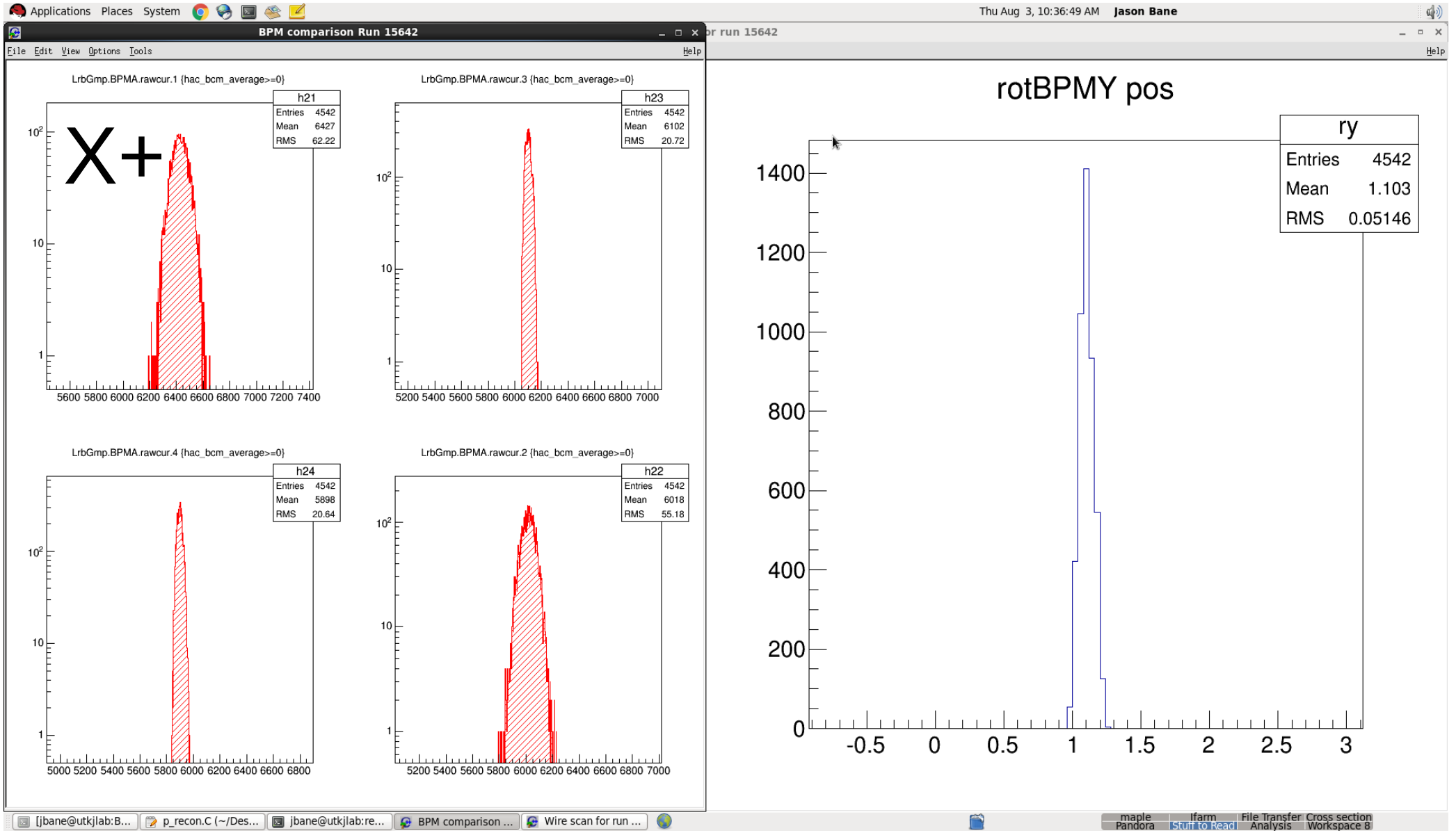
Then rotate!!

Force a signal
in one wire, ~7.9 uA

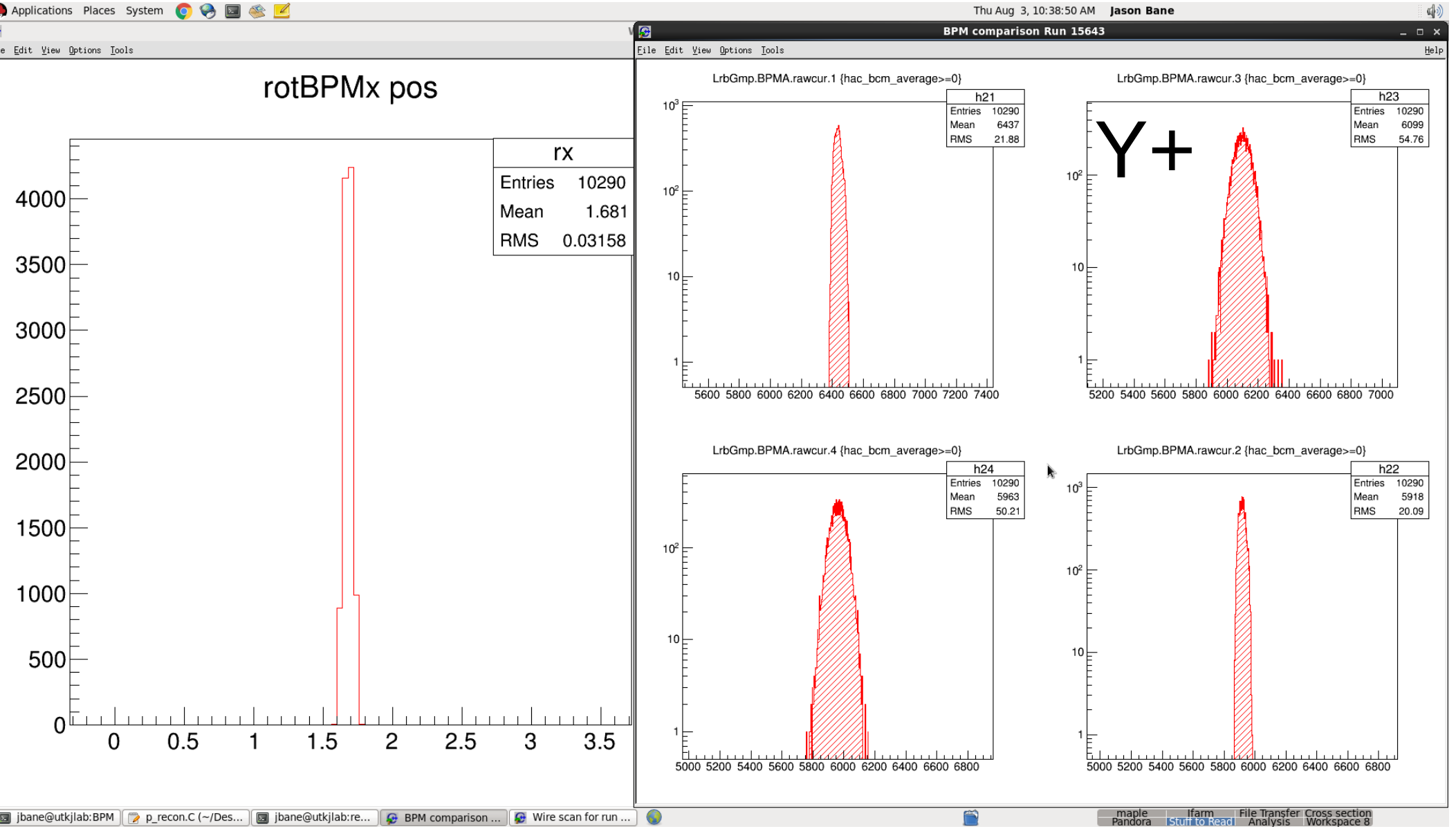
Blast to the past!



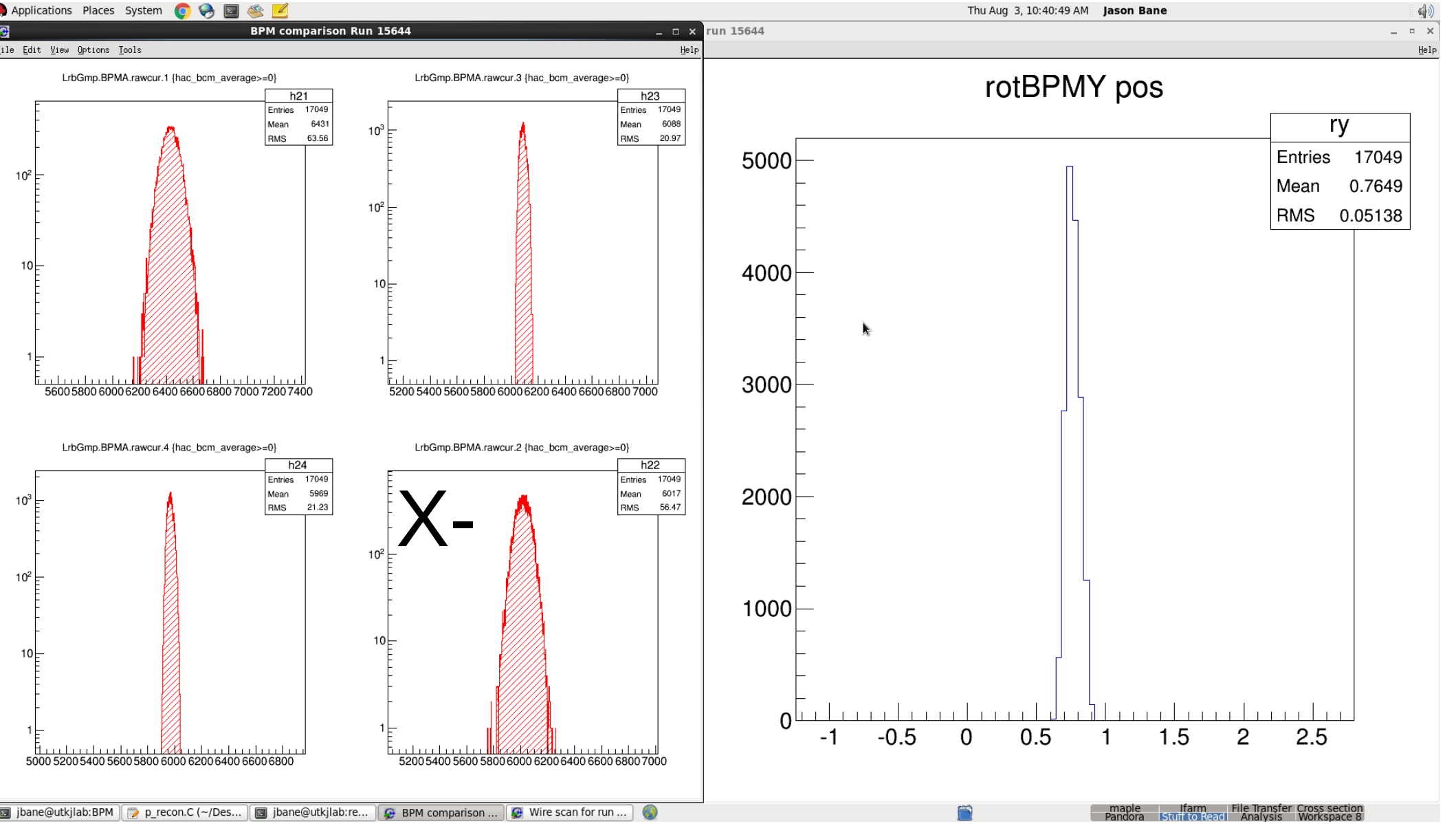
BPMA X+


Applications Places System
Thu Aug 3, 10:36:49 AM Jason Bane
BPM comparison Run 15642
File Edit View Options Tools Help
LrbGmp.BPMA.rawcur.1 {hac_bcm_average>=0}
h21
Entries 4542
Mean 6427
RMS 62.22
X+
LrbGmp.BPMA.rawcur.3 {hac_bcm_average>=0}
h23
Entries 4542
Mean 6102
RMS 20.72
LrbGmp.BPMA.rawcur.4 {hac_bcm_average>=0}
h24
Entries 4542
Mean 5898
RMS 20.64
LrbGmp.BPMA.rawcur.2 {hac_bcm_average>=0}
h22
Entries 4542
Mean 6018
RMS 55.18
rotBPMY pos
ry
Entries 4542
Mean 1.103
RMS 0.05146
[jbane@utkjlab:B...
p_recon.C (~/Des...
jbane@utkjlab:re...
BPM comparison ...
Wire scan for run ...
maple
Pandora
Ifarm
Stuff to Read
File Transfer
Analysis
Cross section
Workspace 8

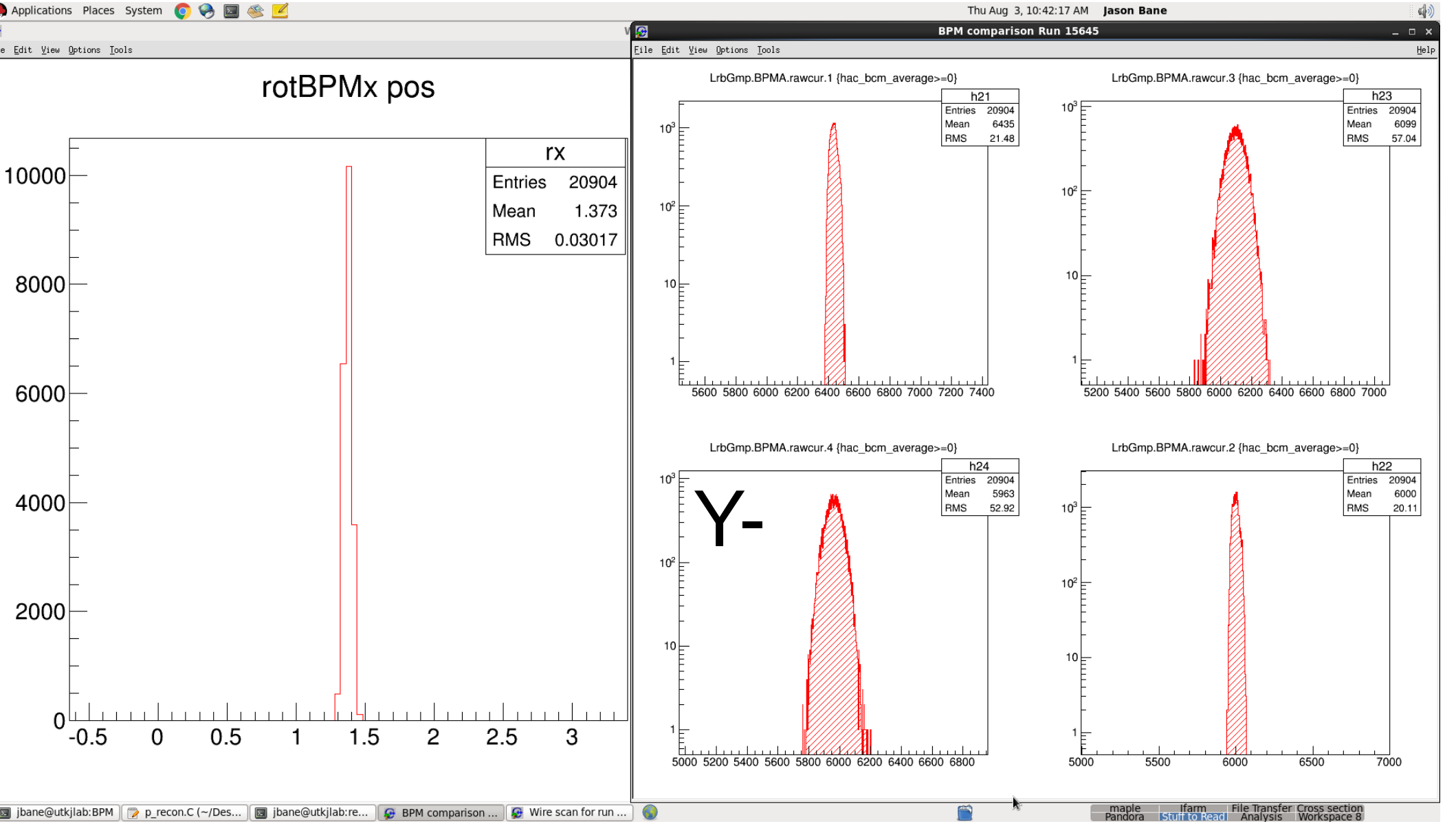
BPMA Y+


Applications Places System
Thu Aug 3, 10:38:50 AM Jason Bane
BPM comparison Run 15643
File Edit View Options Tools Help
rotBPMx pos
rx
Entries 10290
Mean 1.681
RMS 0.03158
LrbGmp.BPMA.rawcur.1 {hac_bcm_average>=0}
h21
Entries 10290
Mean 6437
RMS 21.88
LrbGmp.BPMA.rawcur.3 {hac_bcm_average>=0}
h23
Entries 10290
Mean 6099
RMS 54.76
Y+
LrbGmp.BPMA.rawcur.4 {hac_bcm_average>=0}
h24
Entries 10290
Mean 5963
RMS 50.21
LrbGmp.BPMA.rawcur.2 {hac_bcm_average>=0}
h22
Entries 10290
Mean 5918
RMS 20.09
jbane@utkjlab:BPM
p_recon.C (~/Des...
jbane@utkjlab:re...
BPM comparison ...
Wire scan for run ...
maple
Ifarm
File Transfer
Cross section
Pandora
Stuff to Read
Analysis
Workspace 8

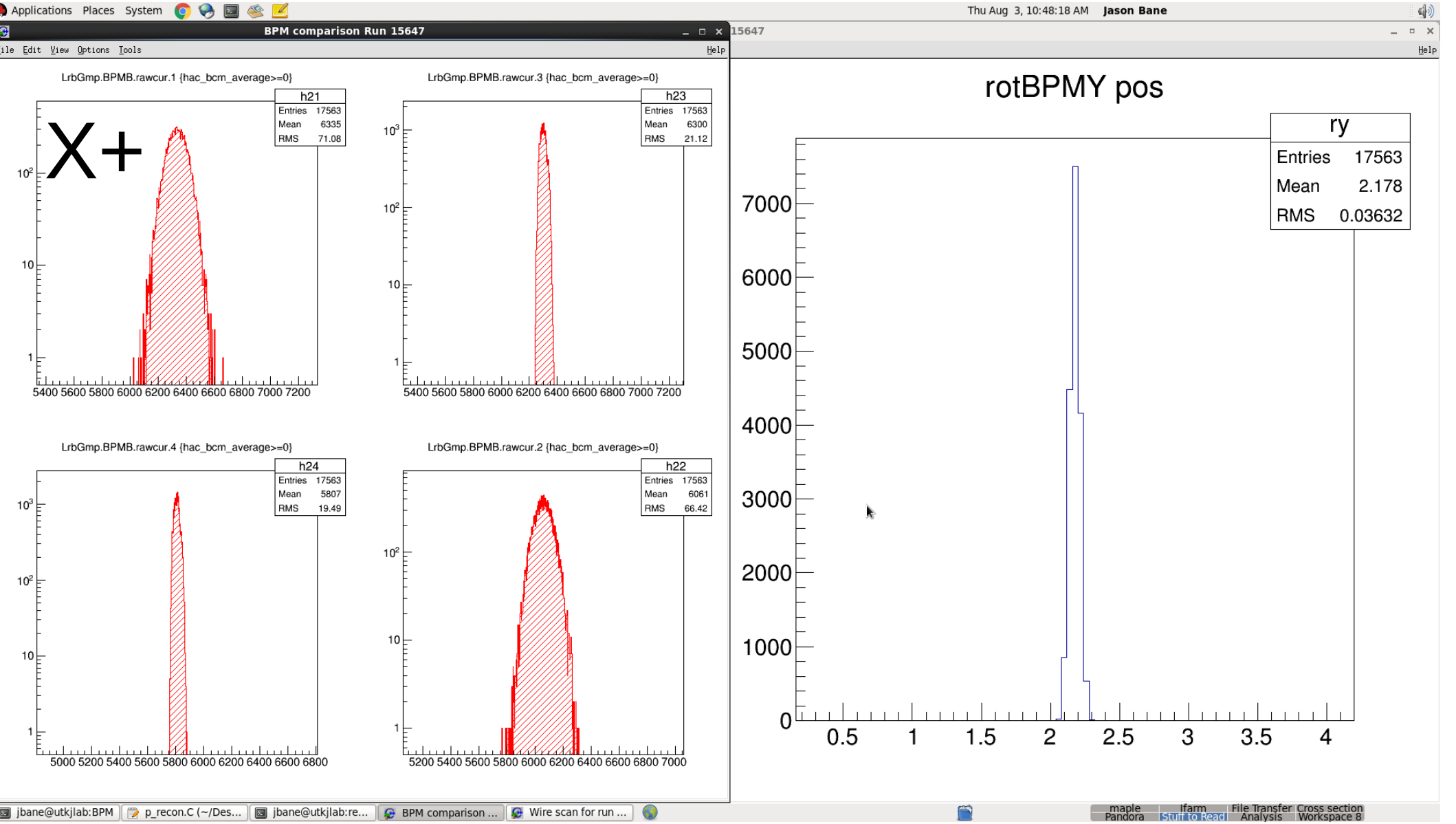
BPMA X-


Applications Places System
Thu Aug 3, 10:40:49 AM Jason Bane
BPM comparison Run 15644
File Edit View Options Tools Help
LrbGmp.BPMA.rawcur.1 {hac_bcm_average>=0}
h21
Entries 17049
Mean 6431
RMS 63.56
LrbGmp.BPMA.rawcur.3 {hac_bcm_average>=0}
h23
Entries 17049
Mean 6088
RMS 20.97
LrbGmp.BPMA.rawcur.4 {hac_bcm_average>=0}
h24
Entries 17049
Mean 5969
RMS 21.23
LrbGmp.BPMA.rawcur.2 {hac_bcm_average>=0}
h22
Entries 17049
Mean 6017
RMS 56.47
X-
run 15644
Help
rotBPMY pos
ry
Entries 17049
Mean 0.7649
RMS 0.05138
jbane@utkjlab:BPM
p_recon.C (~/Des...
jbane@utkjlab:re...
BPM comparison ...
Wire scan for run ...
maple
Pandora
lfarm
Stuff to Read
File Transfer
Analysis
Cross section
Workspace 8

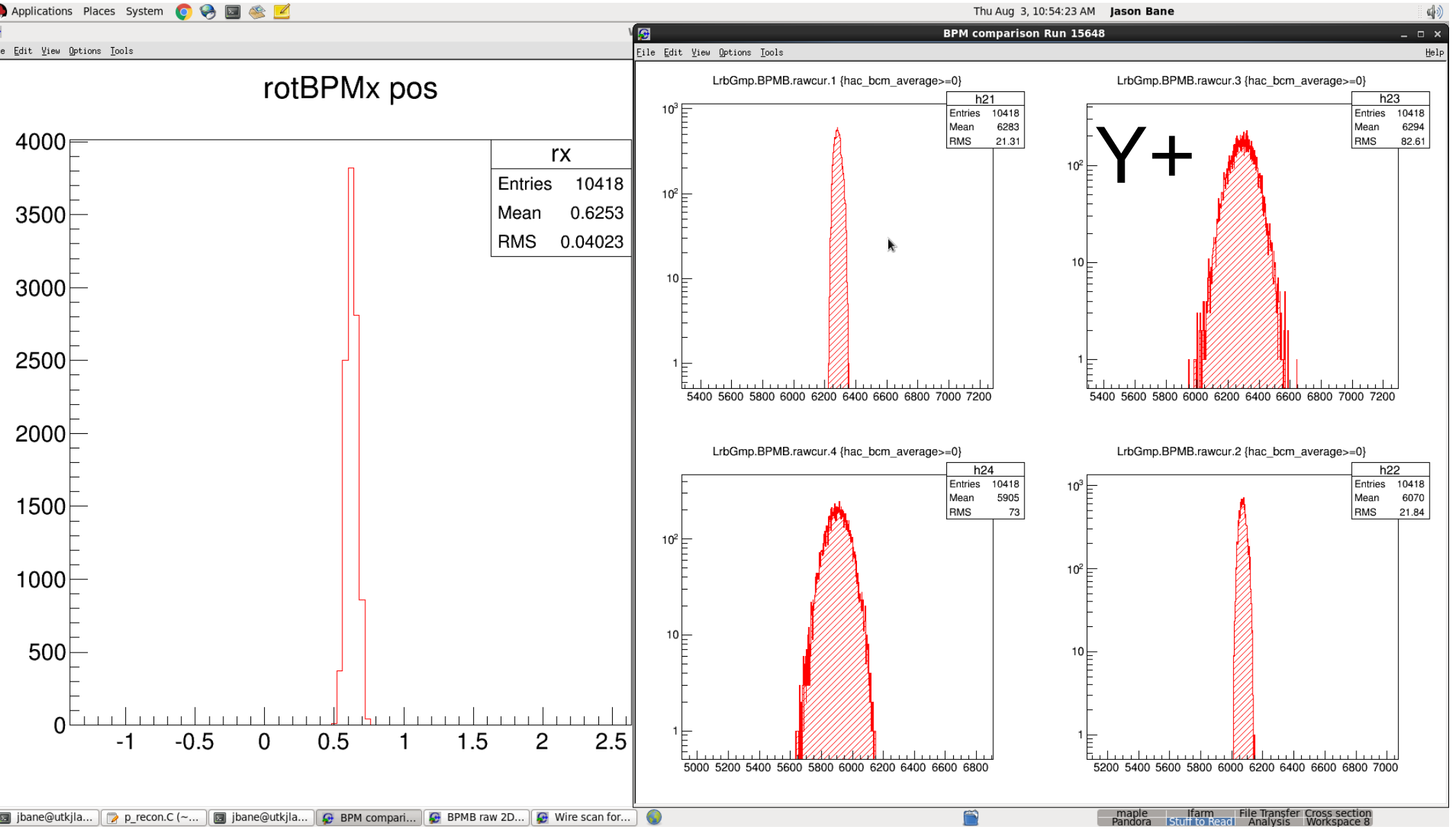
BPMA Y-


Applications Places System
Thu Aug 3, 10:42:17 AM Jason Bane
BPM comparison Run 15645
File Edit View Options Tools Help
rotBPMx pos
rx
Entries 20904
Mean 1.373
RMS 0.03017
LrbGmp.BPMA.rawcur.1 {hac_bcm_average>=0}
h21
Entries 20904
Mean 6435
RMS 21.48
LrbGmp.BPMA.rawcur.3 {hac_bcm_average>=0}
h23
Entries 20904
Mean 6099
RMS 57.04
LrbGmp.BPMA.rawcur.4 {hac_bcm_average>=0}
h24
Entries 20904
Mean 5963
RMS 52.92
Y-
LrbGmp.BPMA.rawcur.2 {hac_bcm_average>=0}
h22
Entries 20904
Mean 6000
RMS 20.11
jbane@utkjlab:BPM
p_recon.C (~/Des...
jbane@utkjlab:re...
BPM comparison ...
Wire scan for run ...
maple
Pandora
lfarm
Stuff to Read
File Transfer
Analysis
Cross section
Workspace 8

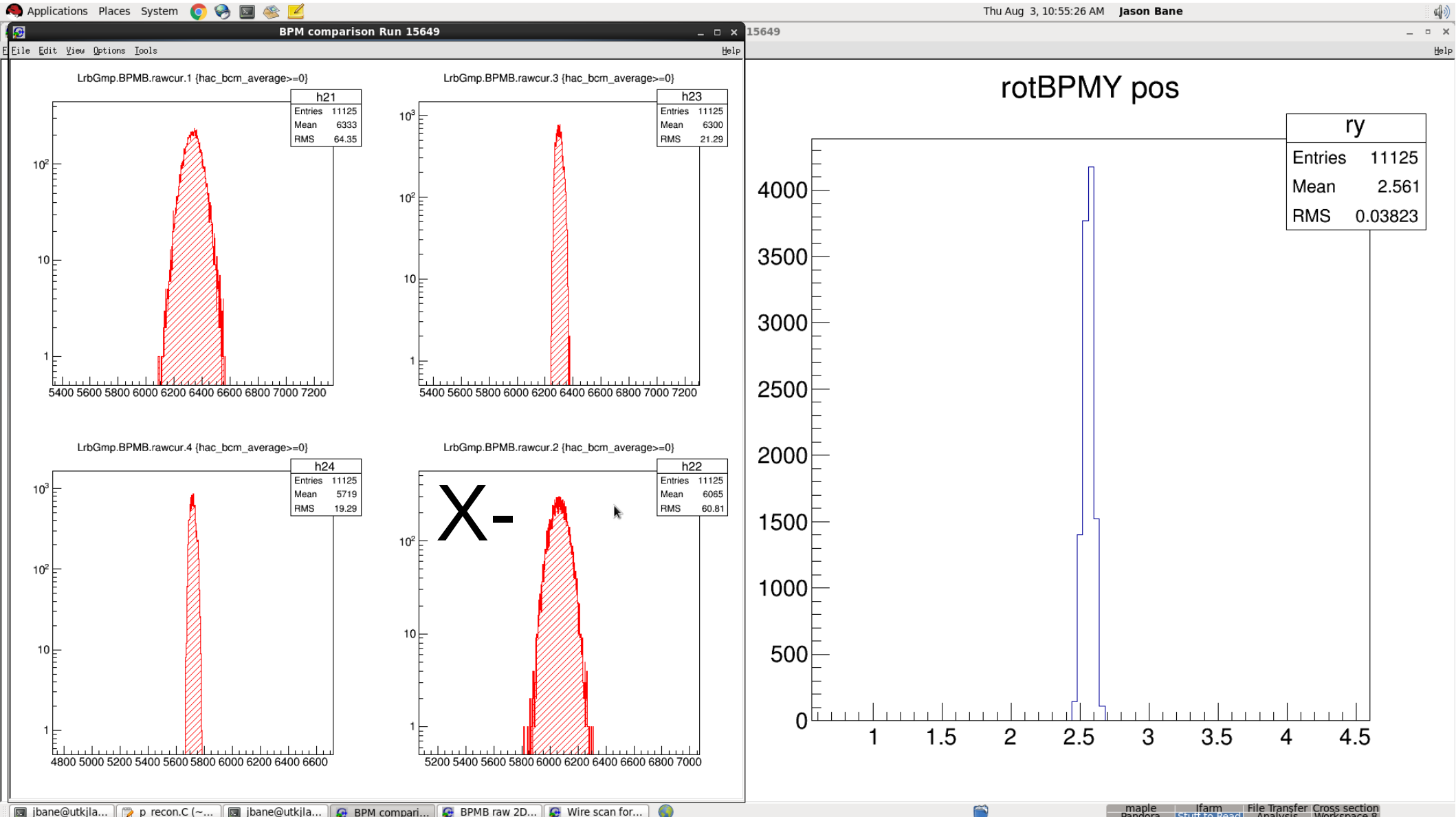
BPMB X+


Applications Places System
Thu Aug 3, 10:48:18 AM Jason Bane
BPM comparison Run 15647
File Edit View Options Tools Help
LrbGmp.BPMB.rawcur.1 {hac_bcm_average>=0}
h21
Entries 17563
Mean 6335
RMS 71.08
X+
LrbGmp.BPMB.rawcur.3 {hac_bcm_average>=0}
h23
Entries 17563
Mean 6300
RMS 21.12
LrbGmp.BPMB.rawcur.4 {hac_bcm_average>=0}
h24
Entries 17563
Mean 5807
RMS 19.49
LrbGmp.BPMB.rawcur.2 {hac_bcm_average>=0}
h22
Entries 17563
Mean 6061
RMS 66.42
15647
Help
rotBPMY pos
ry
Entries 17563
Mean 2.178
RMS 0.03632
jbane@utkjlab:BPM
p_recon.C (~/Des...
jbane@utkjlab:re...
BPM comparison ...
Wire scan for run ...
maple
Pandora
lfarm
Stuff to Read
File Transfer
Analysis
Cross section
Workspace 8

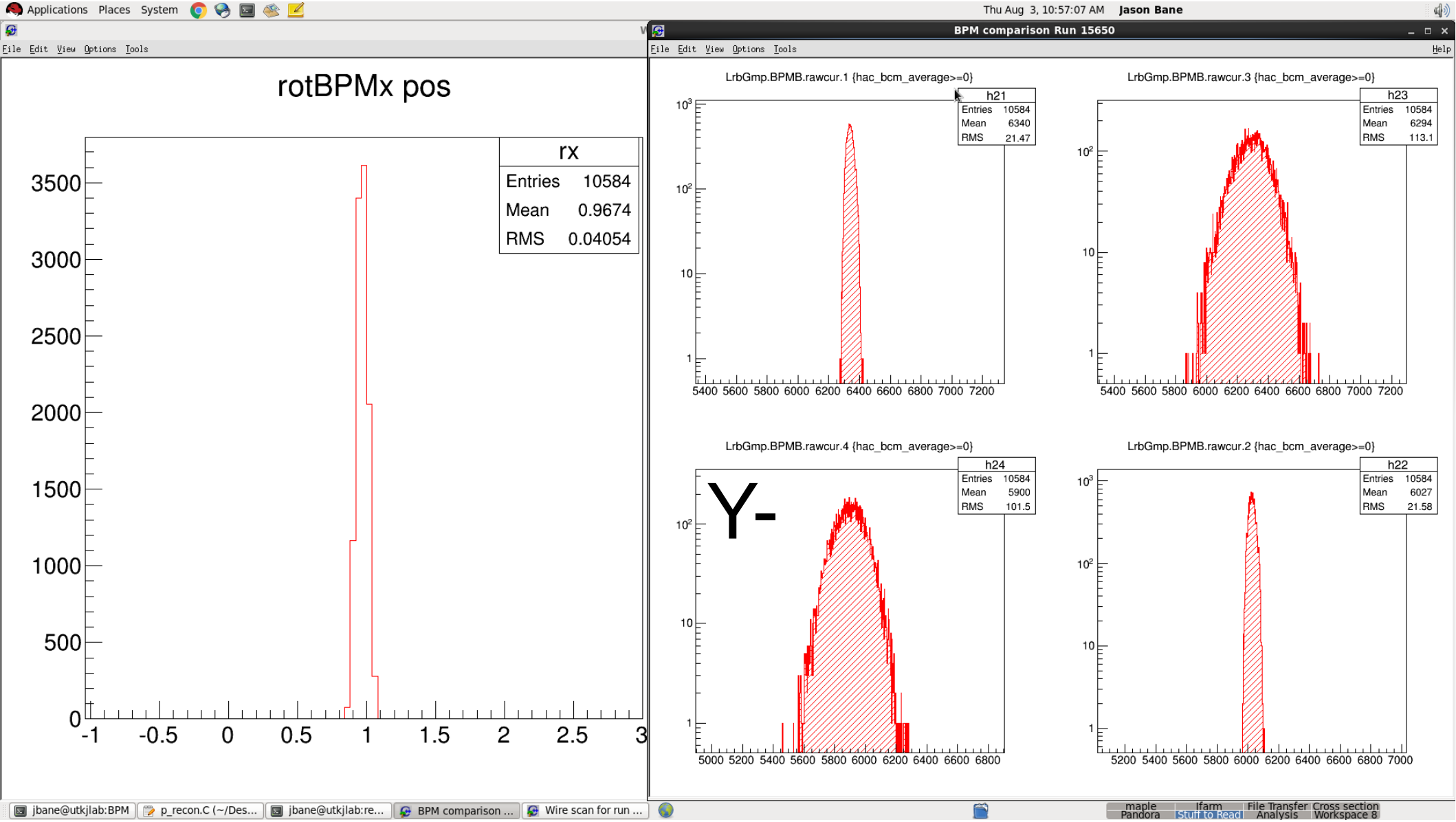
BPMB Y+


Applications Places System
Thu Aug 3, 10:54:23 AM Jason Bane
Edit View Options Tools
rotBPMx pos
rx
Entries 10418
Mean 0.6253
RMS 0.04023
BPM comparison Run 15648
File Edit View Options Tools Help
LrbGmp.BPMB.rawcur.1 {hac_bcm_average>=0}
h21
Entries 10418
Mean 6283
RMS 21.31
LrbGmp.BPMB.rawcur.3 {hac_bcm_average>=0}
h23
Entries 10418
Mean 6294
RMS 82.61
Y+
LrbGmp.BPMB.rawcur.4 {hac_bcm_average>=0}
h24
Entries 10418
Mean 5905
RMS 73
LrbGmp.BPMB.rawcur.2 {hac_bcm_average>=0}
h22
Entries 10418
Mean 6070
RMS 21.84
jbane@utkjla...
p_recon.C (~...
jbane@utkjla...
BPM compari...
BPMB raw 2D...
Wire scan for...
maple
Pandora
lfarm
Stuff to Read
File Transfer
Analysis
Cross section
Workspace 8

BPMB X-


Applications Places System
Thu Aug 3, 10:55:26 AM Jason Bane
BPM comparison Run 15649
File Edit View Options Tools Help
LrbGmp.BPMB.rawcur.1 {hac_bcm_average>=0}
h21
Entries 11125
Mean 6333
RMS 64.35
LrbGmp.BPMB.rawcur.3 {hac_bcm_average>=0}
h23
Entries 11125
Mean 6300
RMS 21.29
LrbGmp.BPMB.rawcur.4 {hac_bcm_average>=0}
h24
Entries 11125
Mean 5719
RMS 19.29
LrbGmp.BPMB.rawcur.2 {hac_bcm_average>=0}
h22
Entries 11125
Mean 6065
RMS 60.81
X-
15649
Help
rotBPMY pos
ry
Entries 11125
Mean 2.561
RMS 0.03823

BPMB Y-


Applications Places System
Thu Aug 3, 10:57:07 AM Jason Bane
File Edit View Options Tools
rotBPMx pos
rx
Entries 10584
Mean 0.9674
RMS 0.04054
BPM comparison Run 15650
File Edit View Options Tools Help
LrbGmp.BPMB.rawcur.1 {hac_bcm_average>=0}
h21
Entries 10584
Mean 6340
RMS 21.47
LrbGmp.BPMB.rawcur.3 {hac_bcm_average>=0}
h23
Entries 10584
Mean 6294
RMS 113.1
LrbGmp.BPMB.rawcur.4 {hac_bcm_average>=0}
h24
Entries 10584
Mean 5900
RMS 101.5
Y-
LrbGmp.BPMB.rawcur.2 {hac_bcm_average>=0}
h22
Entries 10584
Mean 6027
RMS 21.58
jbane@utkjlab:BPM
p_recon.C (~/Des...
jbane@utkjlab:re...
BPM comparison ...
Wire scan for run ...