

Update on May 2026 Waveform Analysis of HGCROC Parameter Scans

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LFHCAL Test Beam Analysis Meeting
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Fredi gave us a new waveform recipe 6/29/26

With a bad channel mask

configs/TB2026/badChannel_HGCROC_SPSTB2026_OnlyCenter2x4.txt

```
bash runHGCROCCalibration_TBSPSH2_2026.sh fbockTB pedestal ParamScan  
  
bash runHGCROCCalibration_TBSPSH2_2026.sh fbockTB calibMuonParScan BCTOA Set1  
  
bash runHGCROCCalibration_TBSPSH2_2026.sh fbockTB calibMuonParScan default Set1  
  
bash runHGCROCCalibration_TBSPSH2_2026.sh fbockTB calibMuonParScan saveNewMuon Set1  
  
bash runHGCROCCalibration_TBSPSH2_2026.sh fbockTB calibMuonParScan implst_red Set1  
  
bash runHGCROCCalibration_TBSPSH2_2026.sh fbockTB calibMuonParScan imp2nd_red Set1  
  
bash runHGCROCCalibration_TBSPSH2_2026.sh fbockTB calibMuonParScan imp3rd_red Set1  
  
bash applyCalibrationHGCROC_TBSPSH2_2026.sh fbockTB ParamScan fullMuon Set1  
  
bash runHGCROCWave_TBSPSH2_2026.sh fbockTB ParamScan wave
```

Crashes in one or two places, but produces reasonable waveforms

Alternate waveform recipes

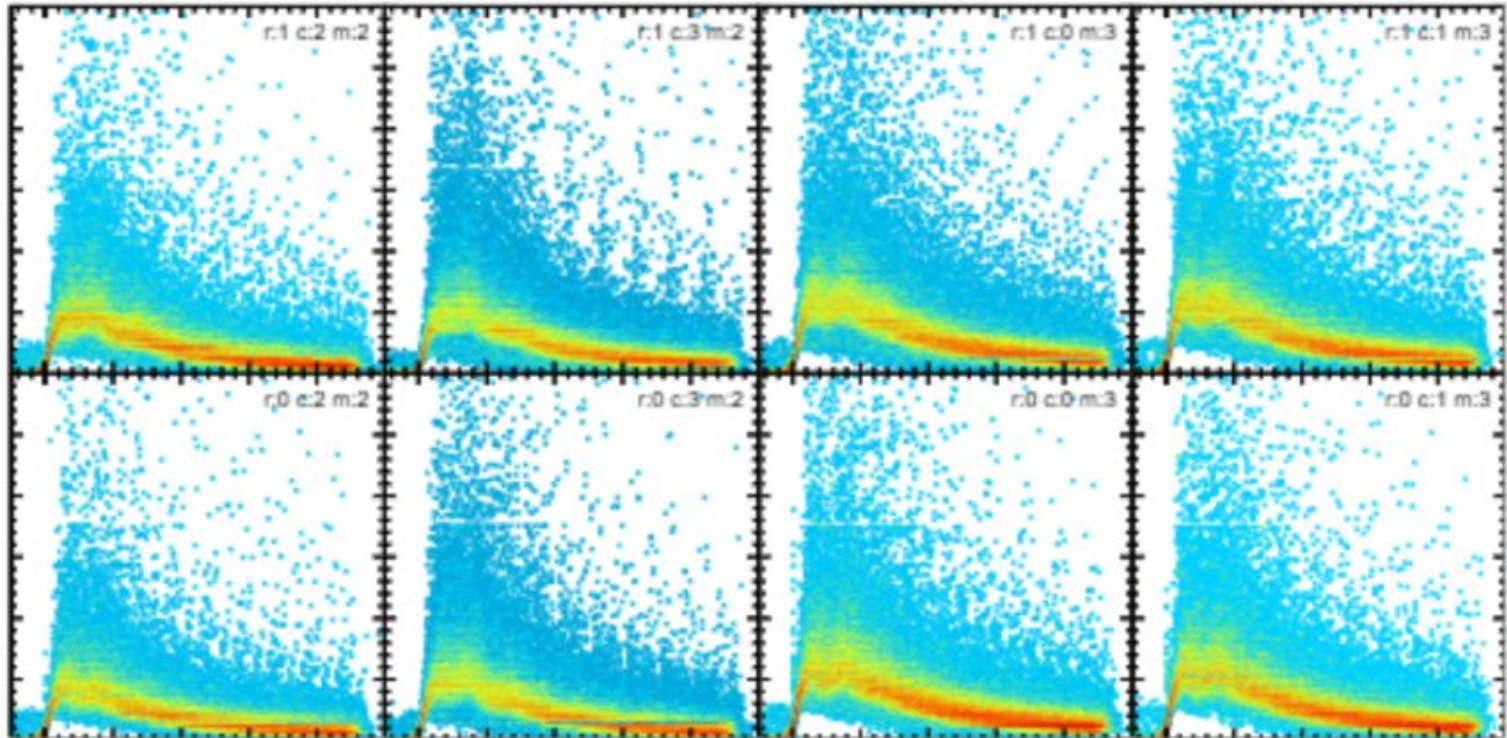
Compare to

<https://friederikebock.gitbook.io/epiclfhcaltb-ana/calibration/other-useful-function-during-calibration#simple-hgcroc-waveform-display>

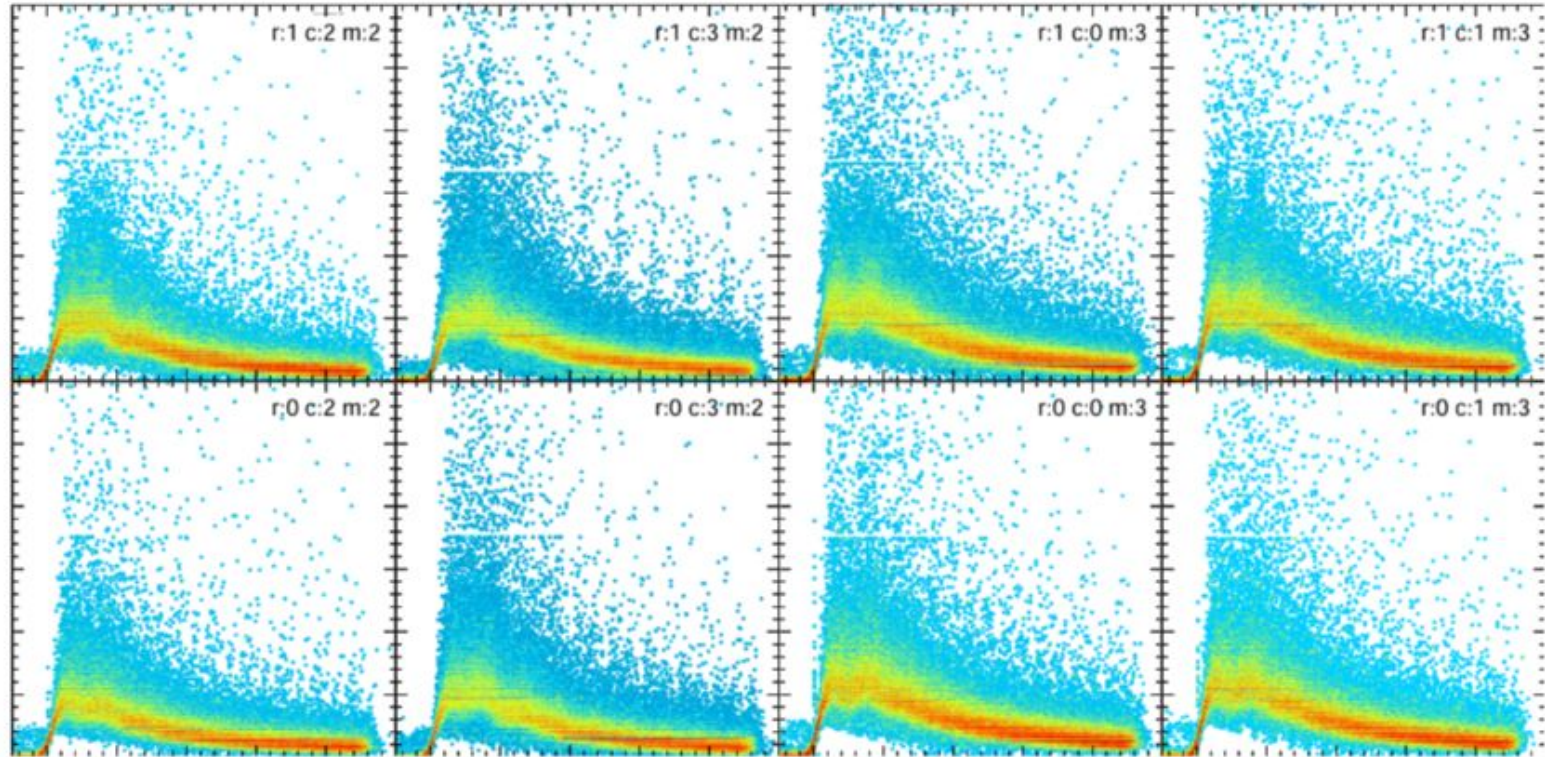
Which uses DataPrep, and something like 6-7 GB of RAM (before crashing mid-job for us at BNL's SDCC, apparently getting clobbered by a 20% RAM cap on the interactive nodes)

New version runs HGCROCStudy (and with “bad channel” mask) instead of DataPrep, RAM seems stay stay under 3 GB and runs happily at SDCC. (We've run multiple instances interactively, or in principle should be straightforward to submit to batch.)

Fredi version of 329 chocolate bar plot



Run 329, Ari's version: seems equivalent



Parameter scans

HGCROC Parameter Scan

HV 44

Full Set D

Runs 296-355*... 370

RF/CF/CC (default had been 9/7/4 or 9/7/5, but later switched to 12/7/3)

Scanned:

1-15/7/5

9/7/1-10

9/3,5/5 * (355 about here)

And then RF/CF/CC/CFComp

9/5/5/1,8,15

12/7/3,4/1

And 12/7/3/1 seems to have become the default

Parameter scans

<https://docs.google.com/spreadsheets/d/1pmbsKPRPAIAqagHmNnuFb40VGemhyoWIZUqg1JhXNgk/edit?gid=1124769573#gid=1124769573>

HGCROC Parameter Scan

HV 44

Full Set D

Runs 296-355*

Then a chunk of runs that... maybe David, Adam, Ari failed to add to the ScanOverview... and... probably only because of that?... someone then marked Medium quality “runs from here to 370 not in the ScanOverviews?? -> marked medium”

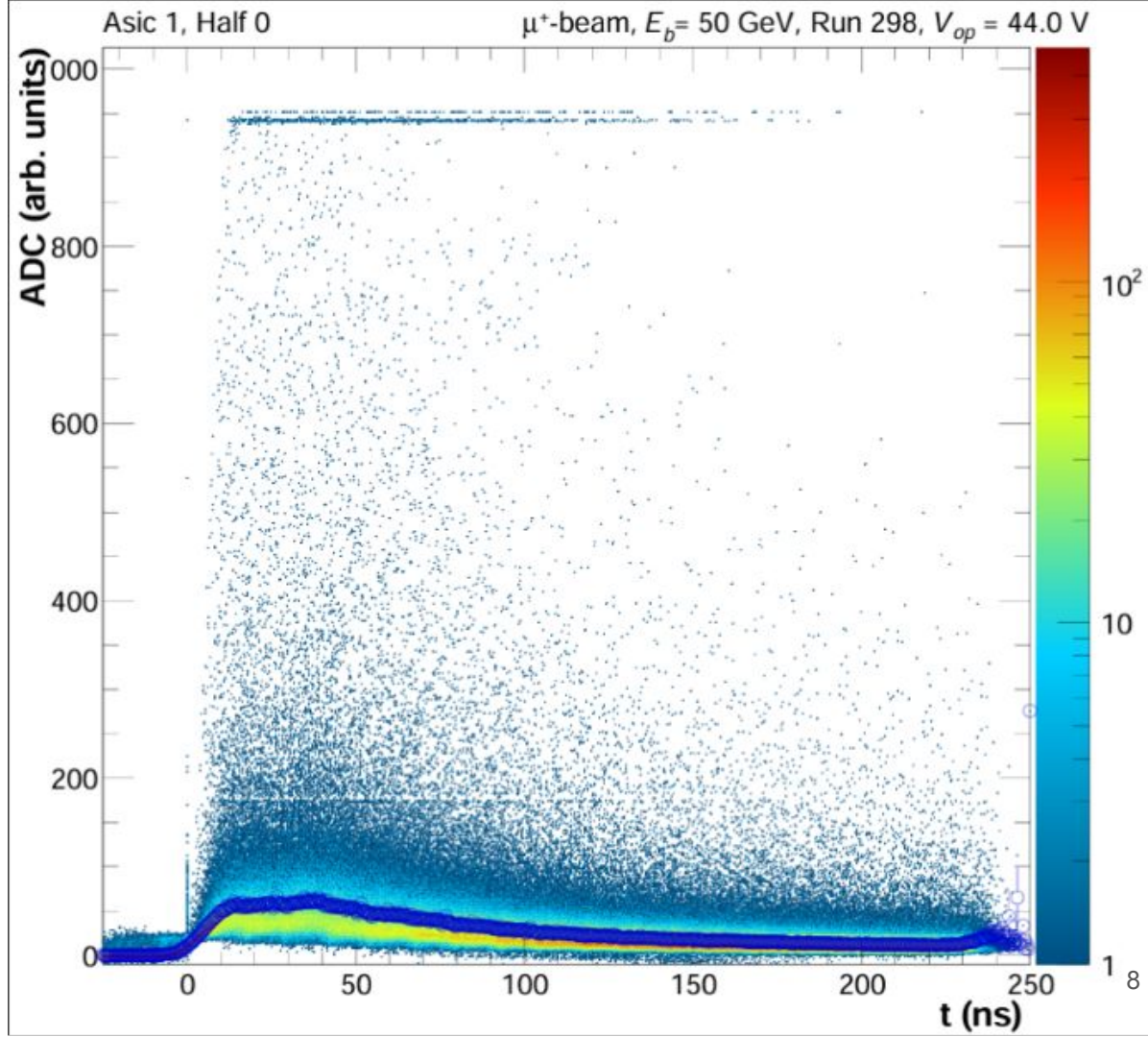
We assume there's no problem with them... probably we should add them to the ScanOverview?

Run 298

RF: 9

CF: 7

CC: 5

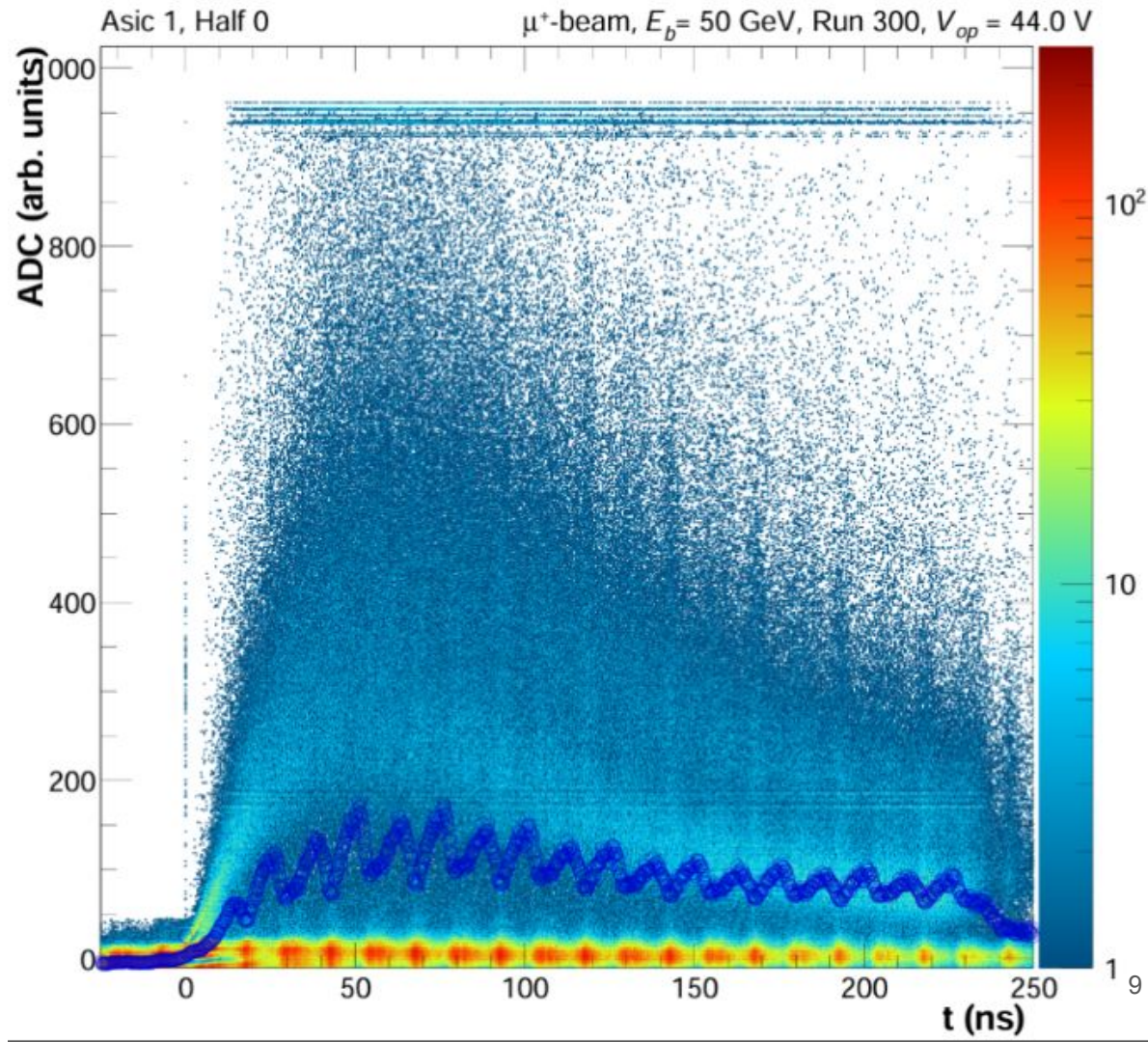


Run 300

RF: 1

CF: 7

CC: 5

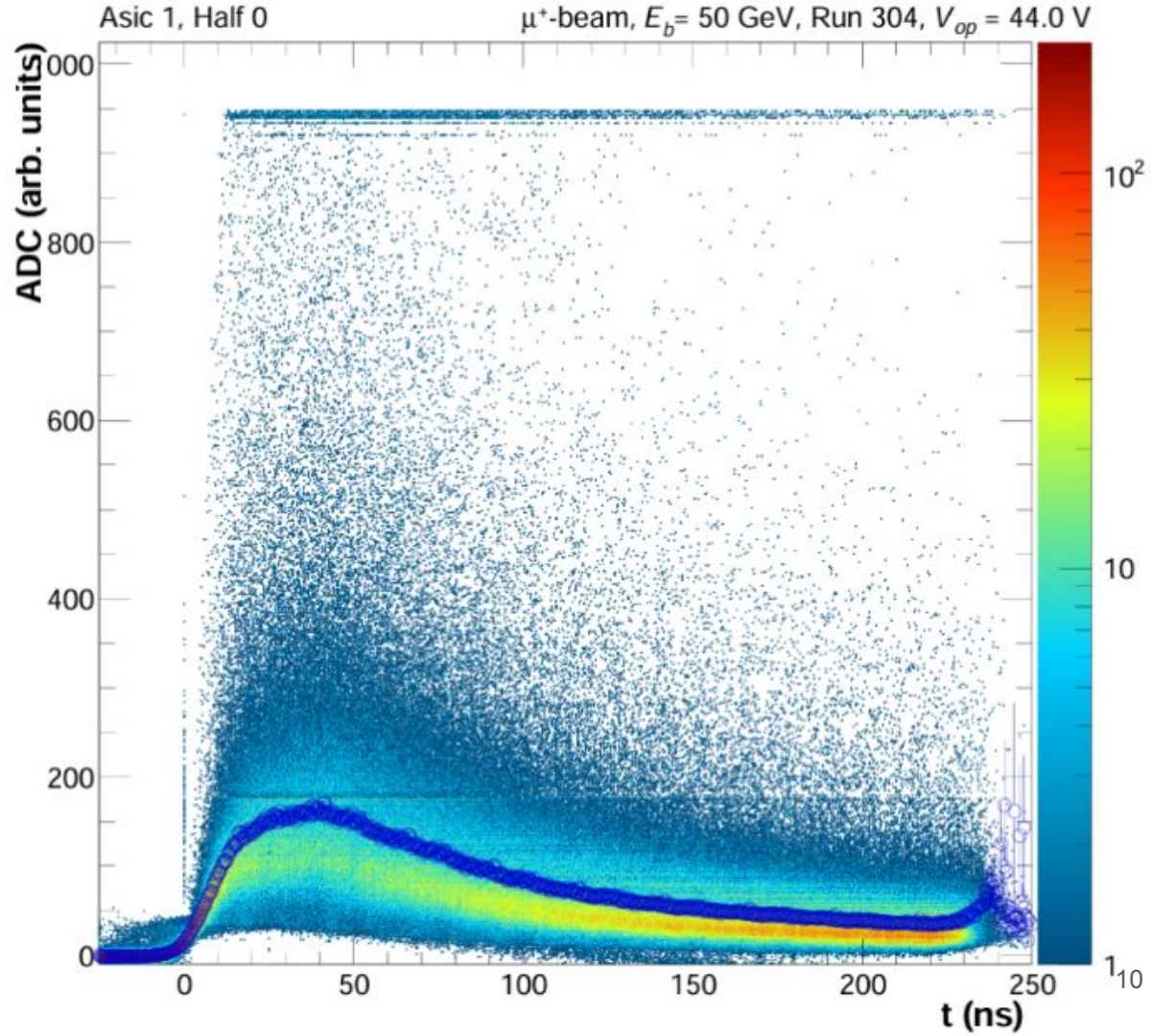


Run 304

RF: 3

CF: 7

CC: 5

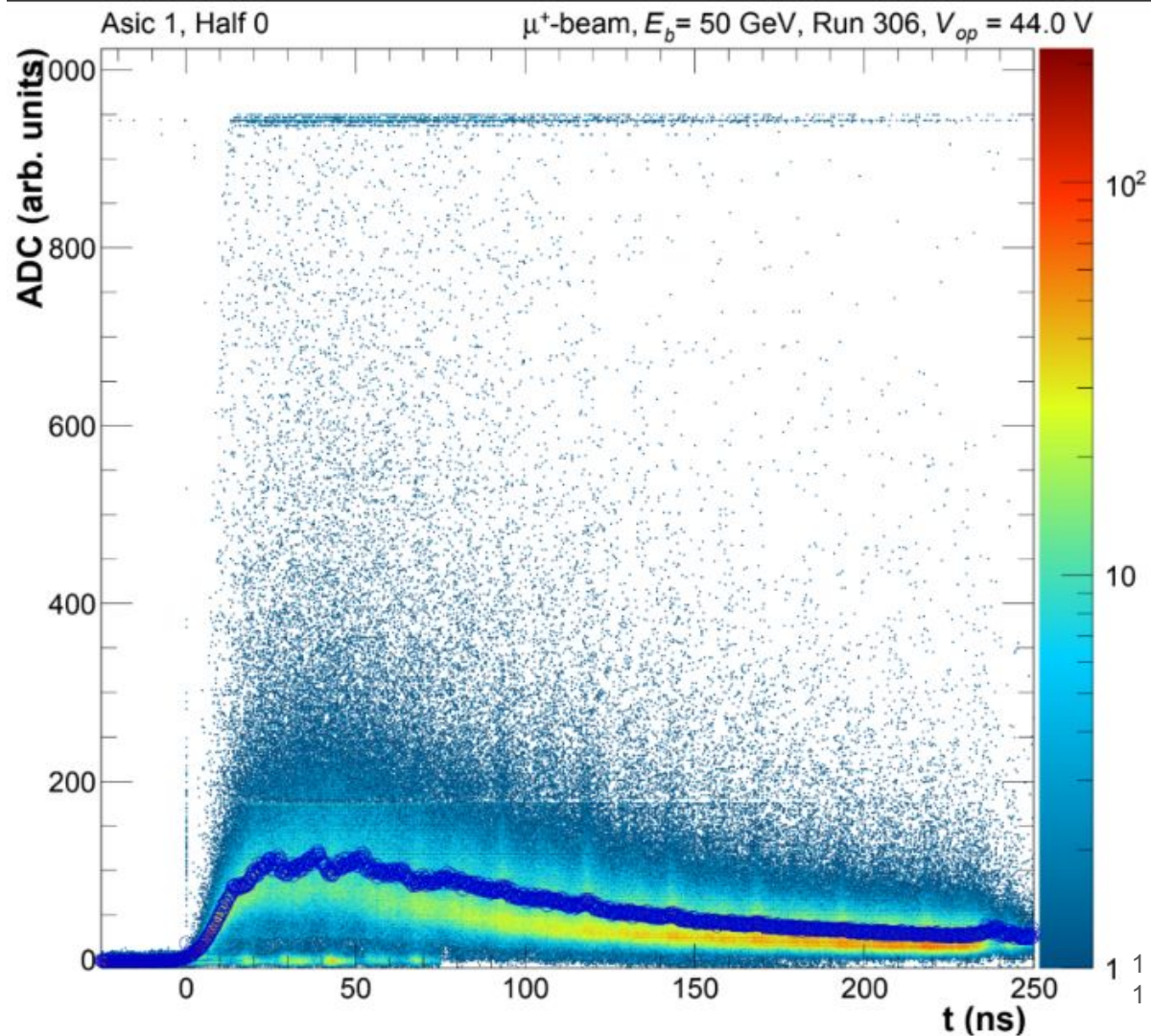


Run 306

RF: 4

CF: 7

CC: 5

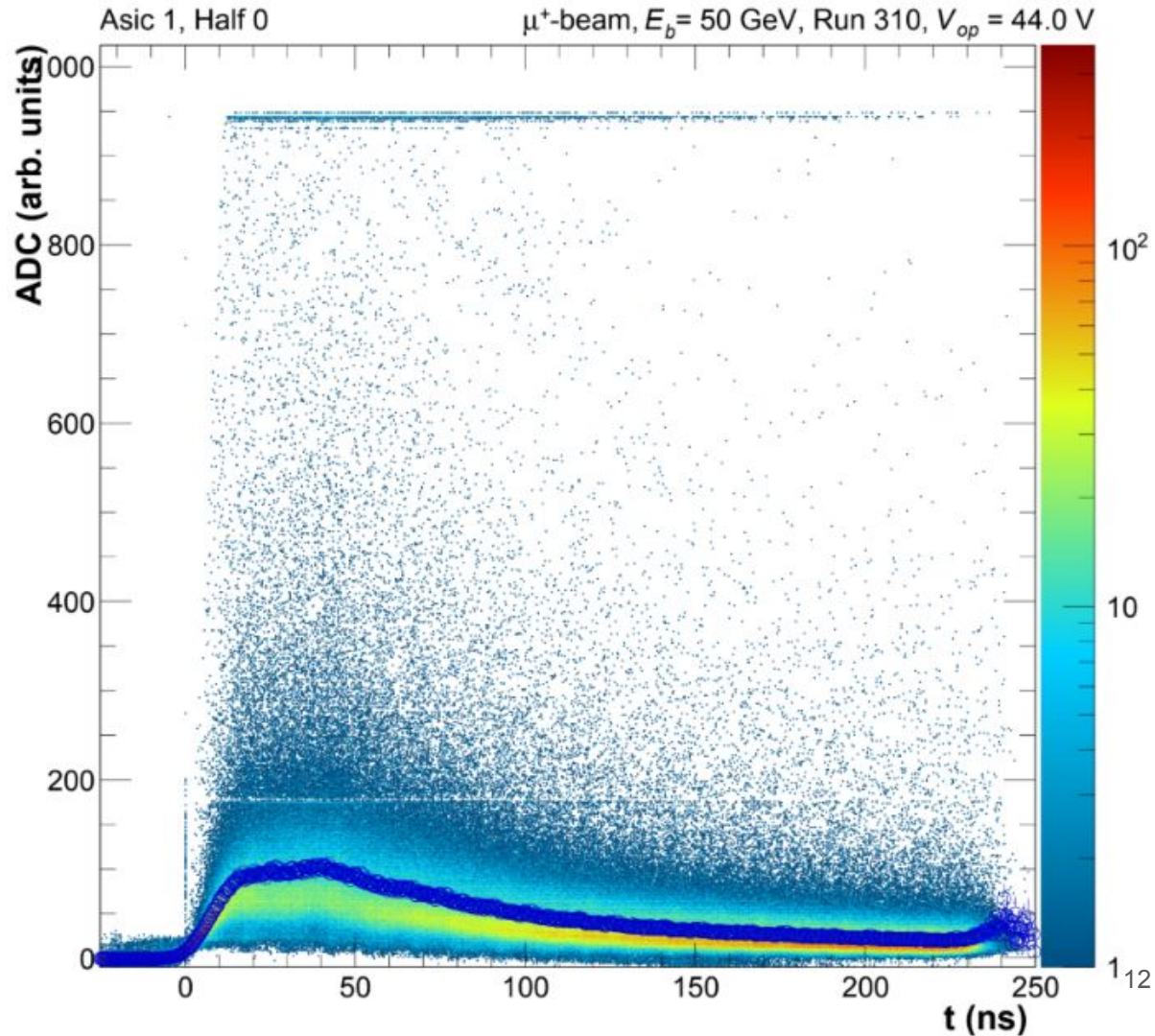


Run 310

RF: 5

CF: 7

CC: 5

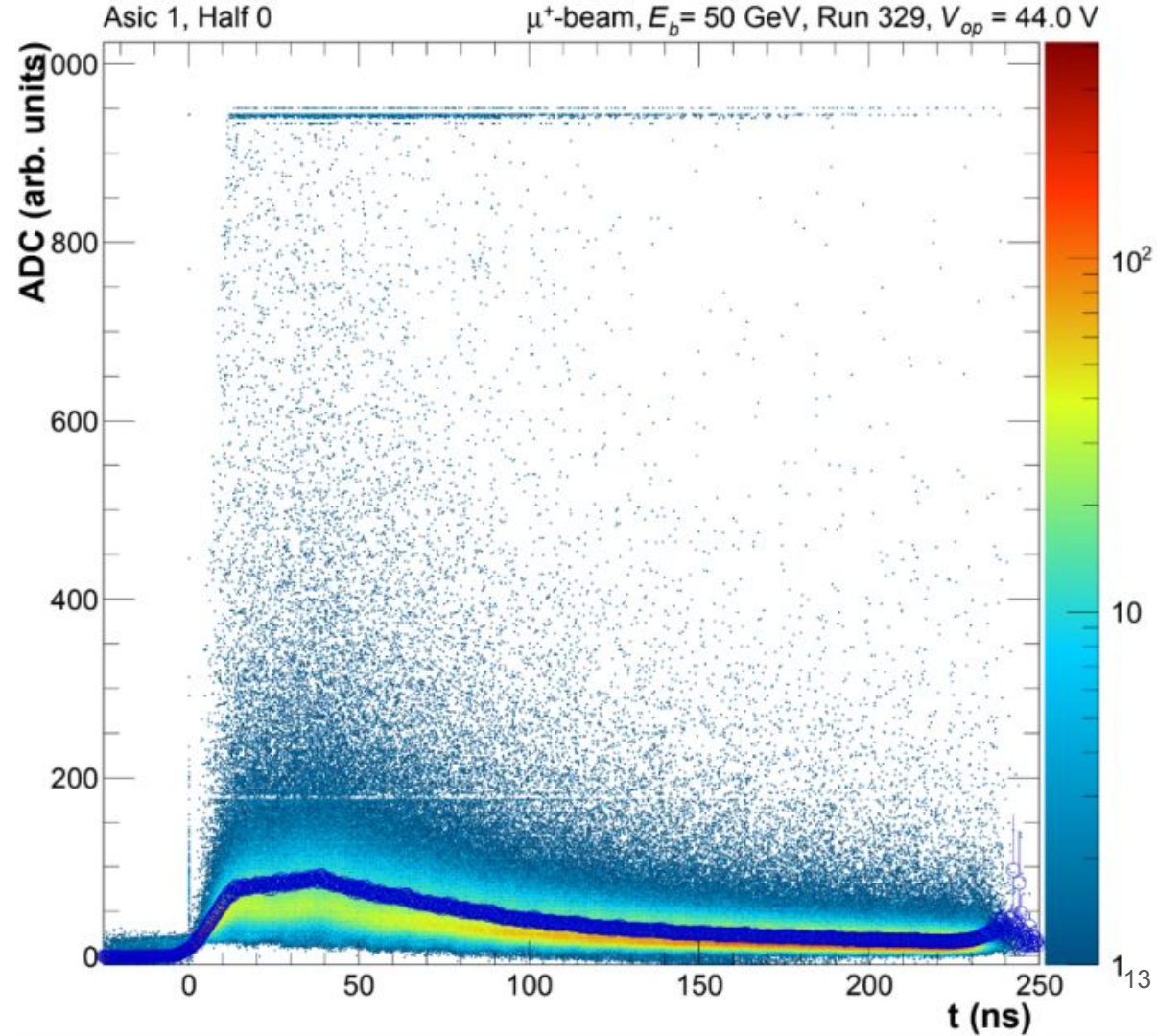


Run 329

RF: 6

CF: 7

CC: 5



Plans

Consider 5 layers vs. 10 layers

Maybe individual channels

Scan more runs

Try some kind of FWHM for a width measurement

Other Suggestions?

Particular runs people are more interested in than others?