

# Bpm pedestal study

-- to check beam position

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# BPM pedestal Study

□ Goal: To help resolve the yields drift problems

- Two issues about beam position
  - Previously Calibrated Beam position ~ current dependence
  - Beam position jumps in the same energy setting

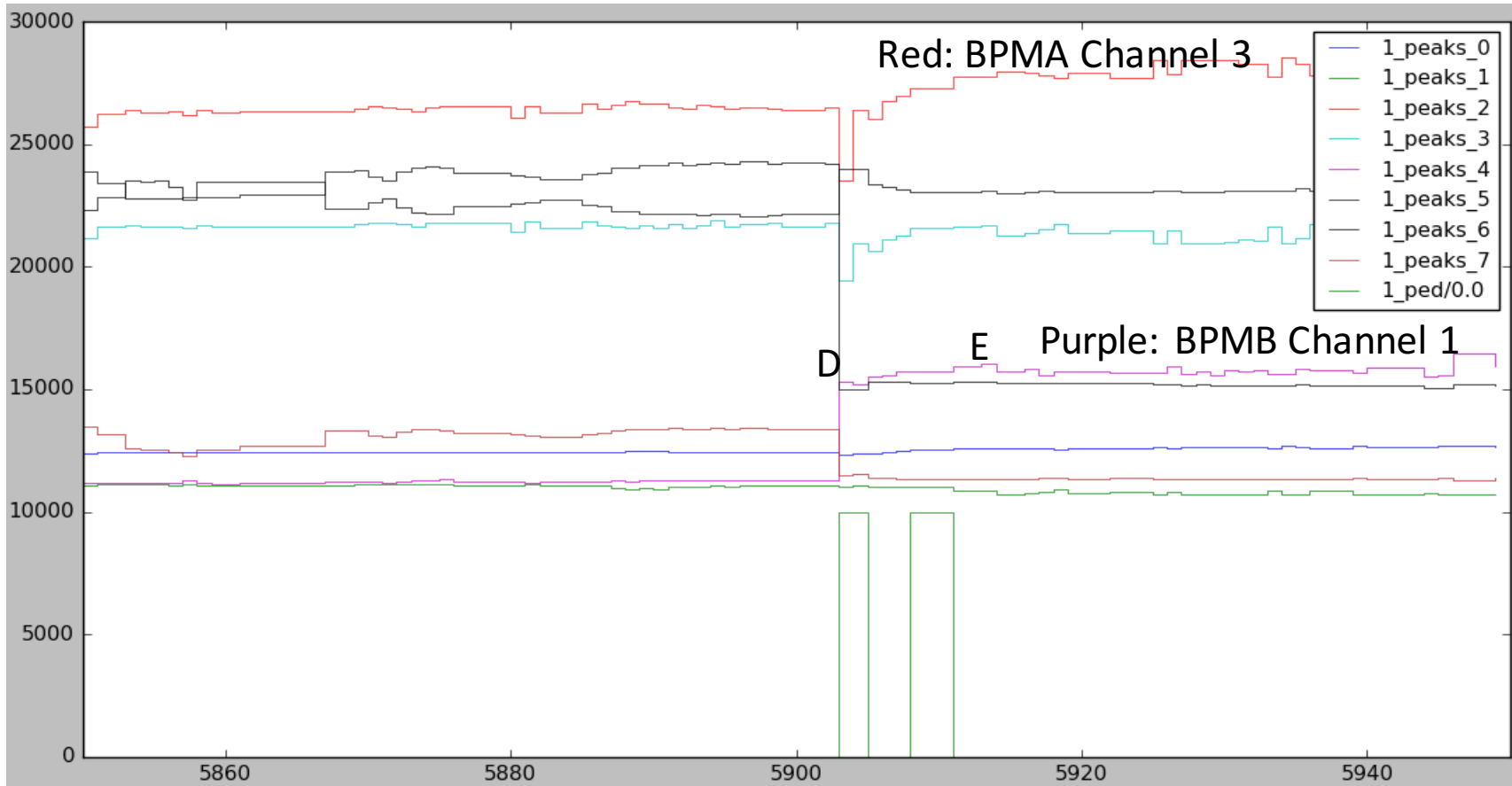
□ Last time

- Beam trip events  real pedestal

This talk focus on:

- More study on pedestal drift, double-peaks or jumps

# BPM pedestal Study



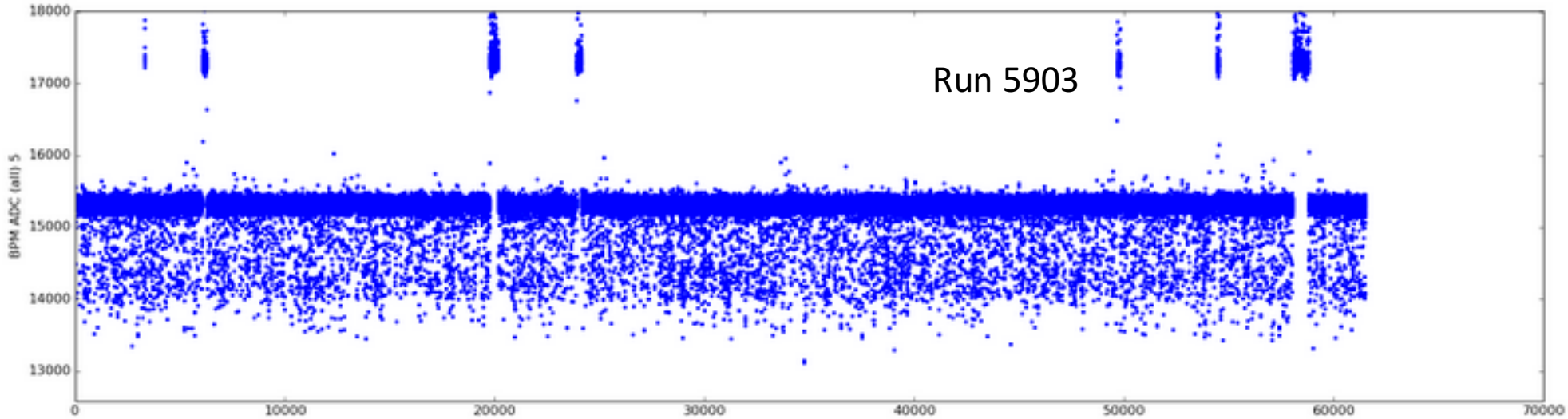
D:

- Add second carbon cover

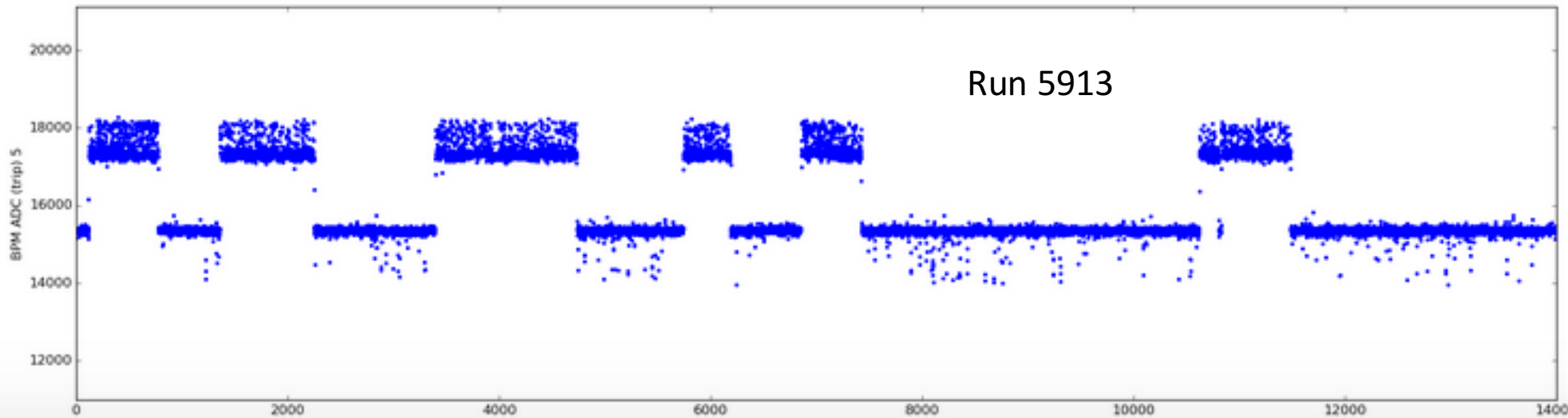
D-E:

- Run 5903-5904 pedestal run
- 5903-5904 taken within 4 mins
- Target ramp up/down/up during Run 5905-5906
- Run 5909-5910 bpm calibrations
- After run 5910, target quench ~ 10 hours
- Run 5911-5920 bpm calibrations
- Pedestal became stable from Run 5911

# Pedestals for BPMB channel 1

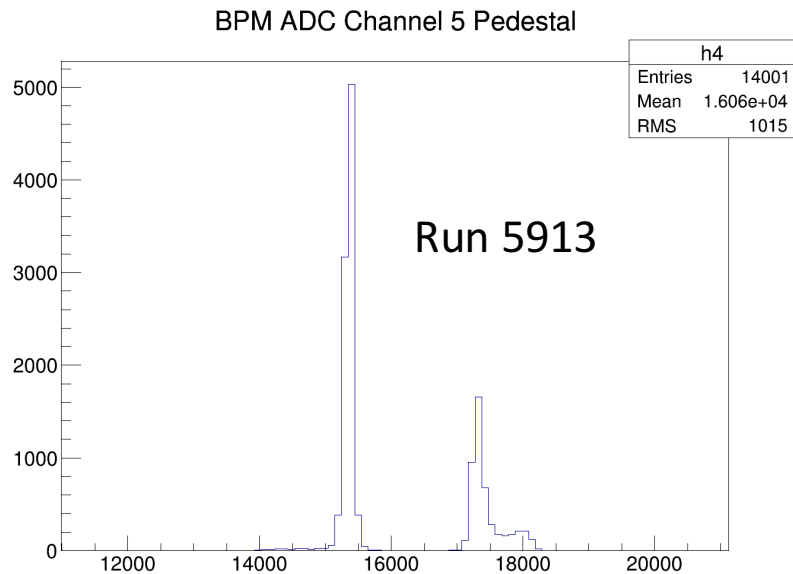
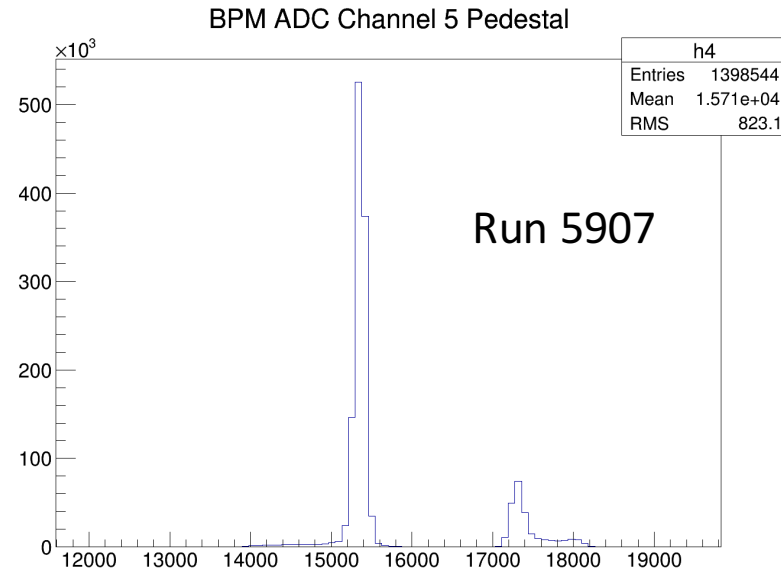
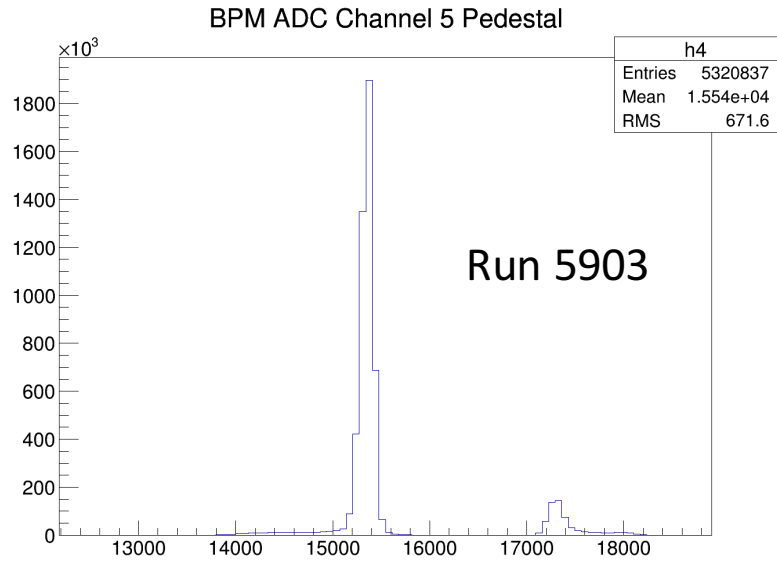


The pedestal have  
More and more probability  
to be the higher value  
From run 5903-5913



The pedestal stay in  
Low or high value by  
random

# Pedestals for BPMB channel 1



Two Peak Ratio:

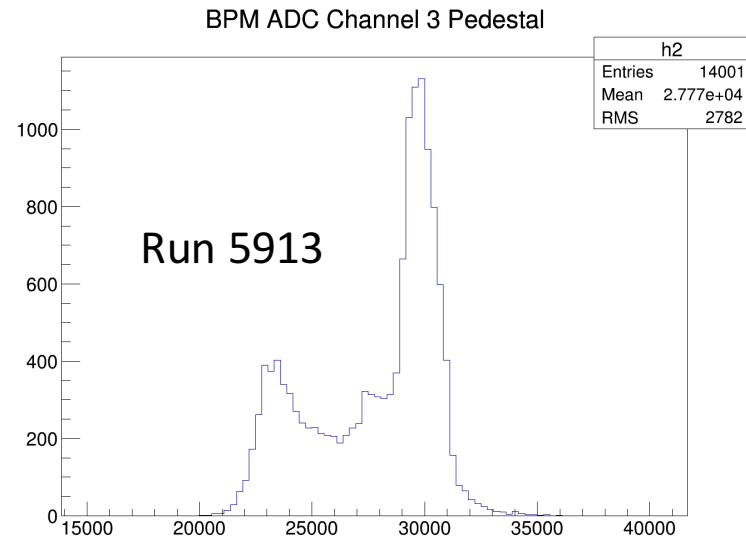
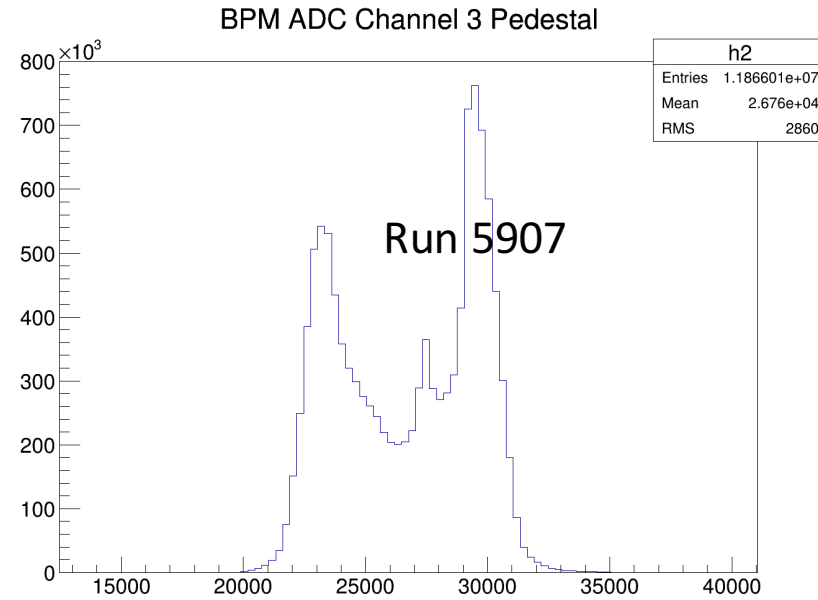
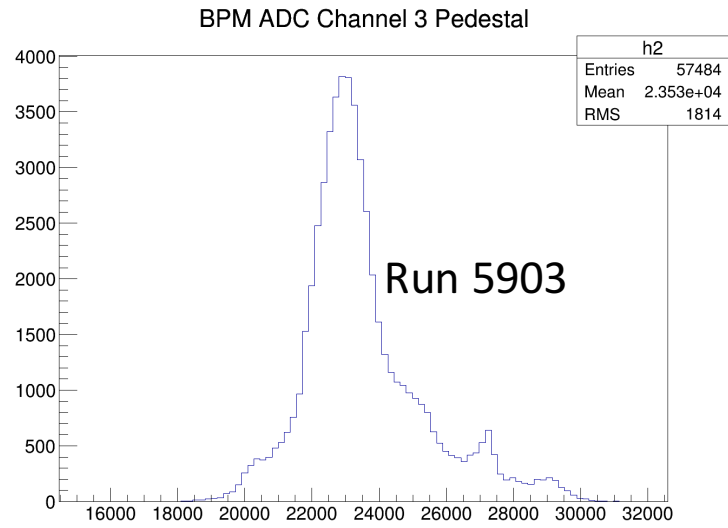
Run 5903 - 10:1

Run 5907 - 5:1

Run 5913 - 3:1

The pedestal have  
more probability  
To be the higher value  
From run 5903-5913

# Pedestals for BPMA channel 3



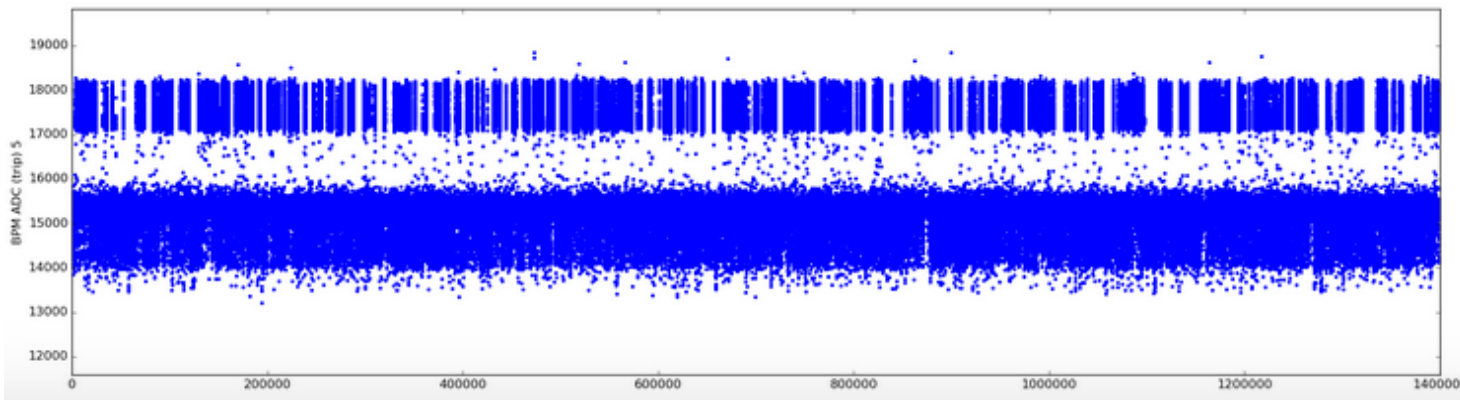
Two Peak Ratio:  
Run 5903 - 1:0.1  
Run 5907 - 1:1.5  
Run 5913 - 1:3

The pedestal have  
more probability  
To be the higher value  
From run 5903-5913

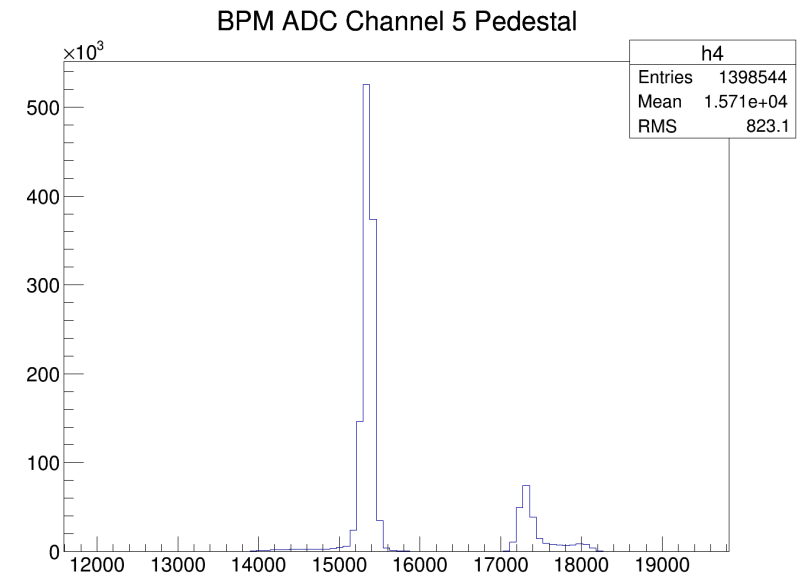
# Pedestals for BPMB channel 1

Issue: whether to stay in 1<sup>st</sup> peak or 2<sup>nd</sup> peak by random

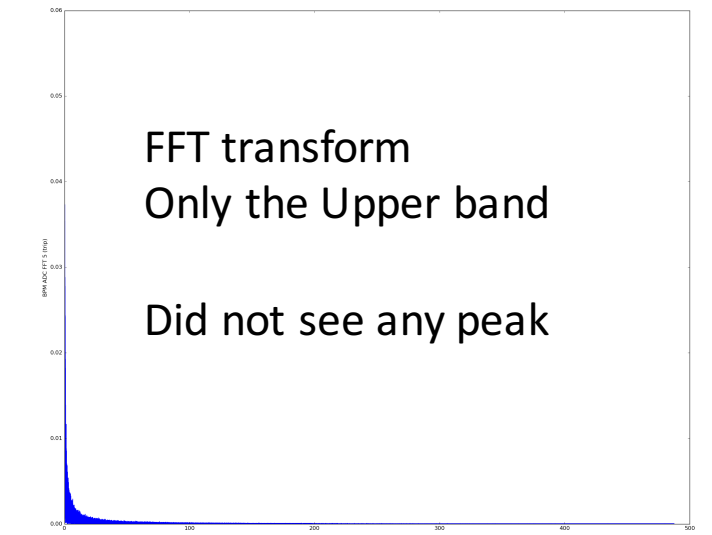
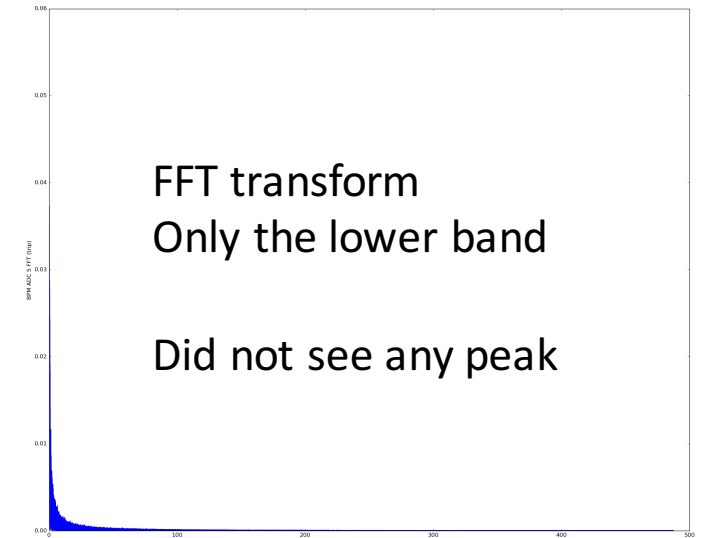
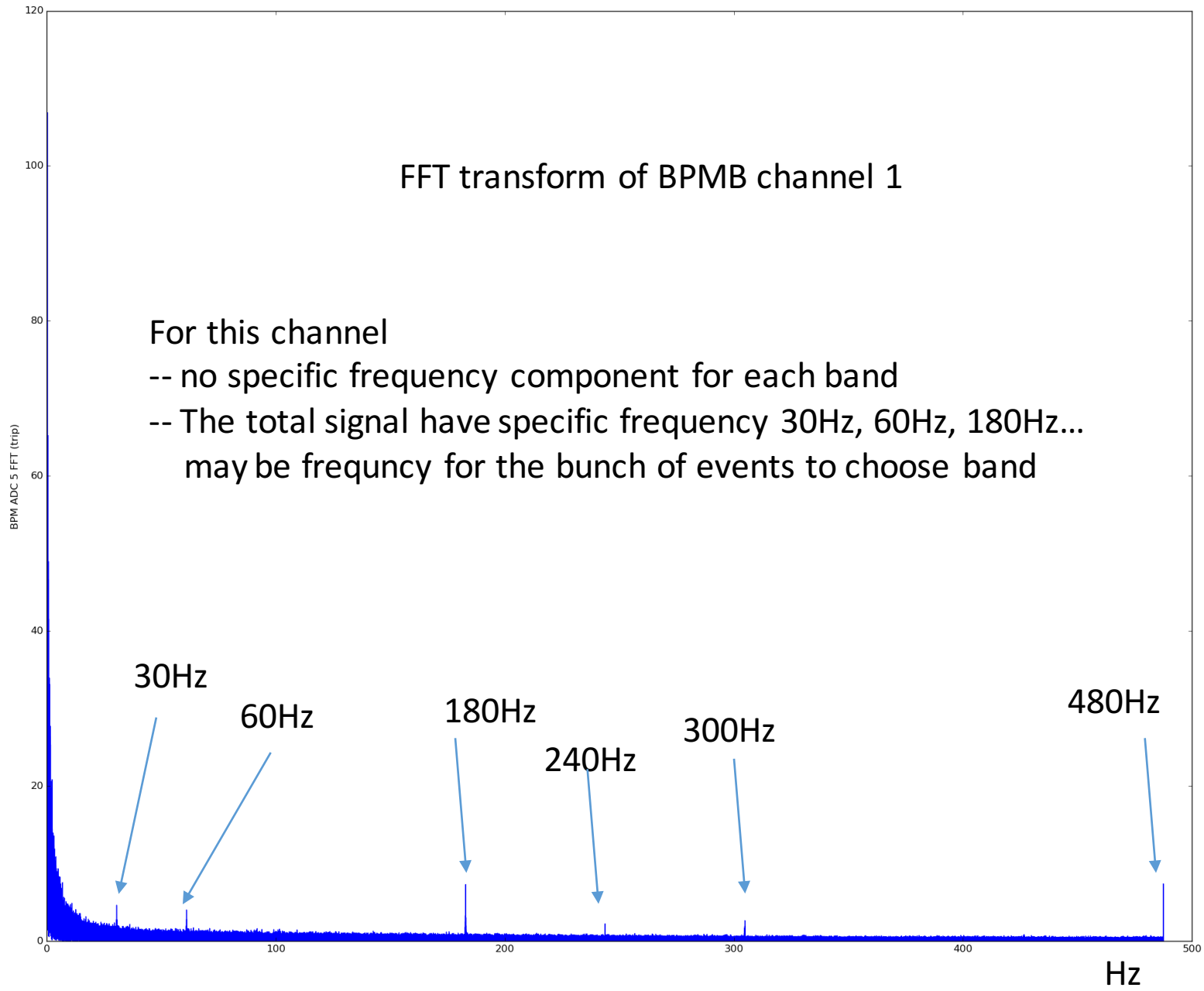
If exists a way to separate/correct the two peak (can relate back to beam run) to minimize the beam position uncertainty



Run 5907

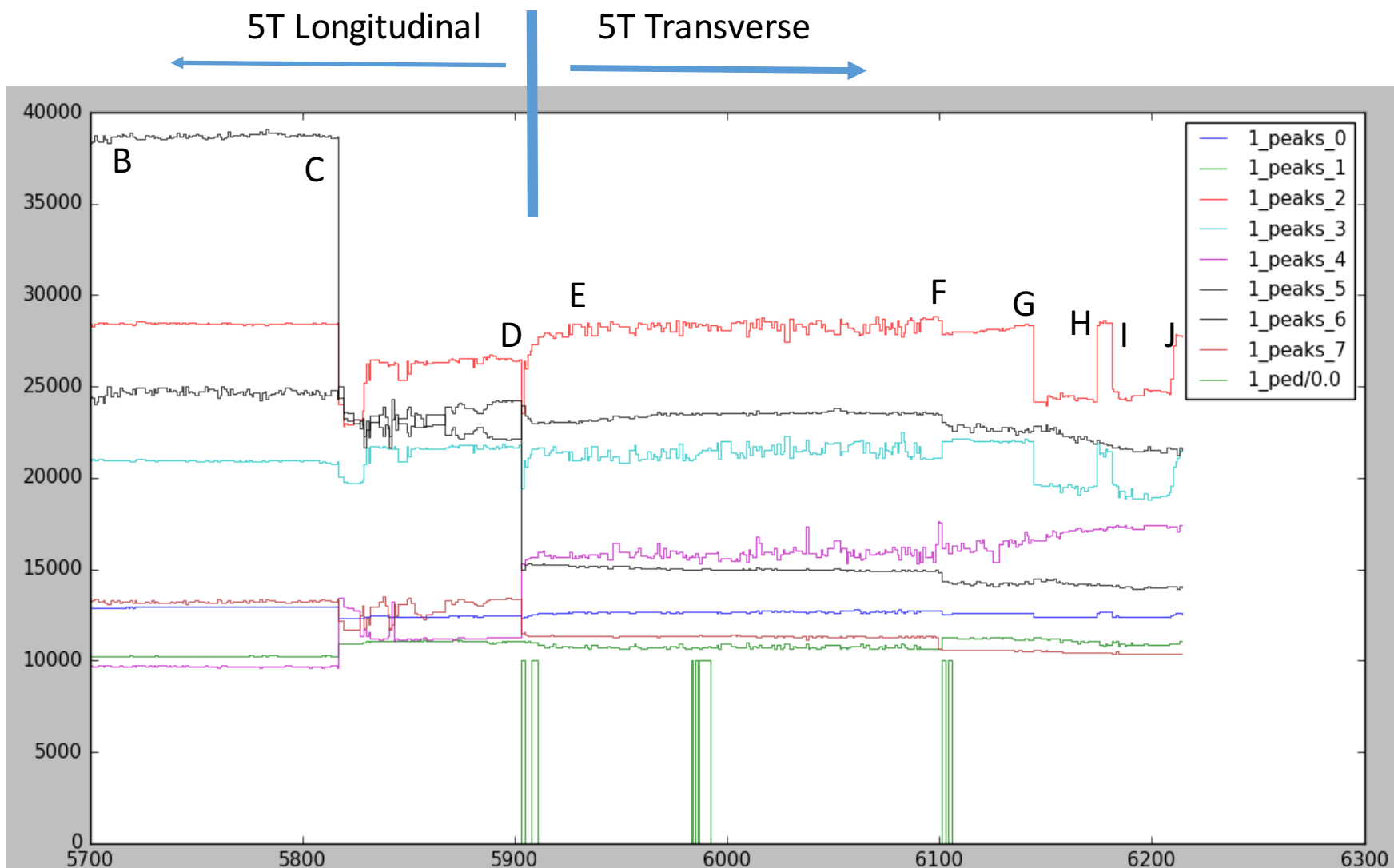


# Pedestals for BPMB channel 1





# Pedestals Jumps between G and J



G:

- After run 6143, septum trip and Moller
- After Moller, flood in Hall A
- Beam back run 6144
- 20 hours between run 6143-6144

H:

- After run 6173, target anneal BCM calibration
- 2.5hours later, back production

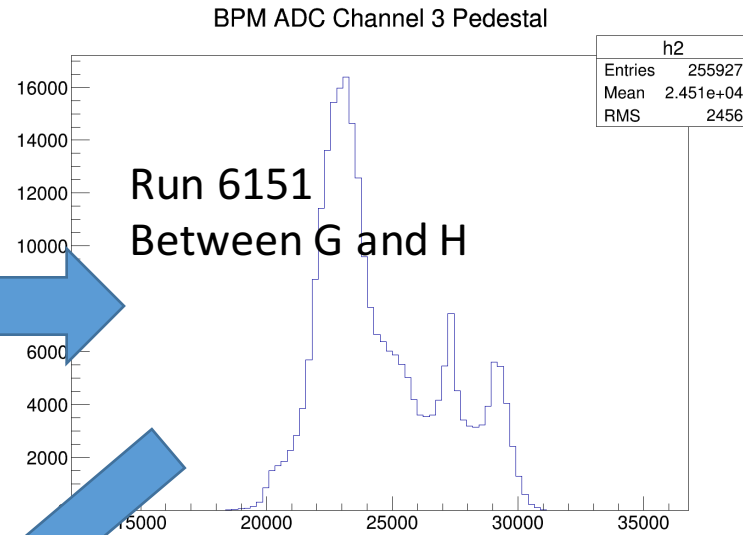
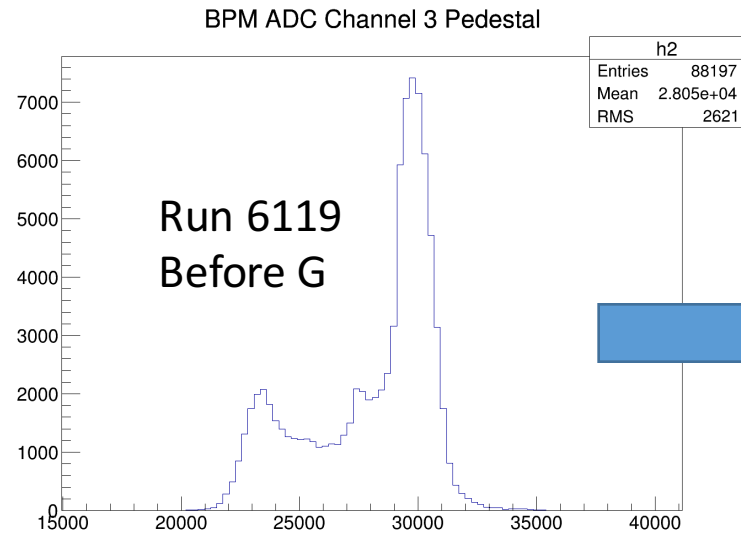
I:

- After run 6179, escorted access to check septum trip (not real trip, but rebooted)
- 2 hours later, back production

J:

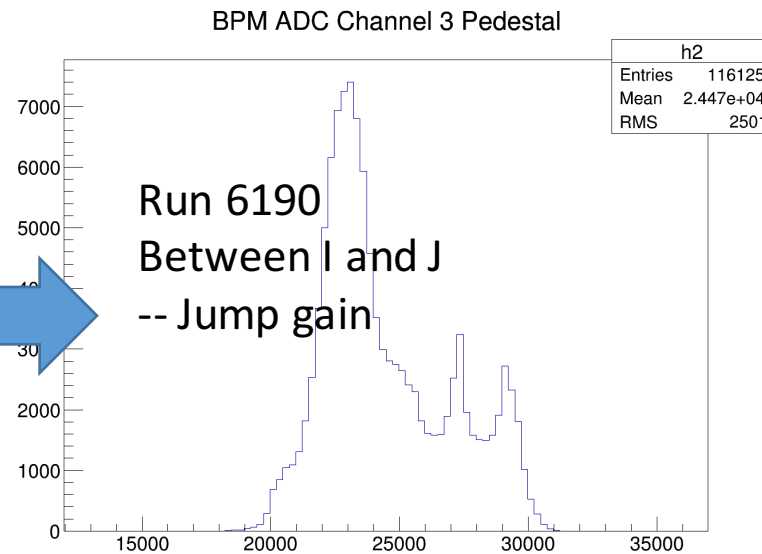
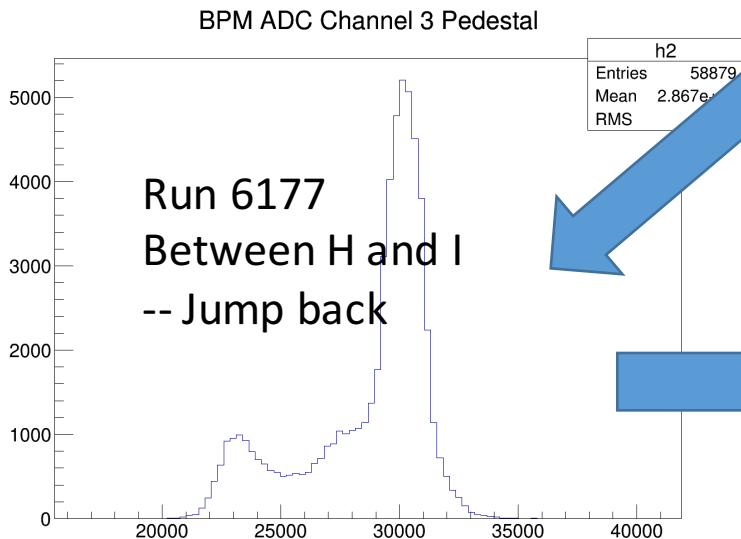
- Jumps happen run 6210
- But continuous taking data from run 6208-6212, no stop

# Pedestals for BPMA channel 3 (red)



The pedestal jump between G and J:

Just simply switch the two peak strength after recovering from beam down



# Pedestal Study

- Any suggestions?
- Will start to look at BPM calibration procedure