WEEKLY ANALYSIS UPDATE

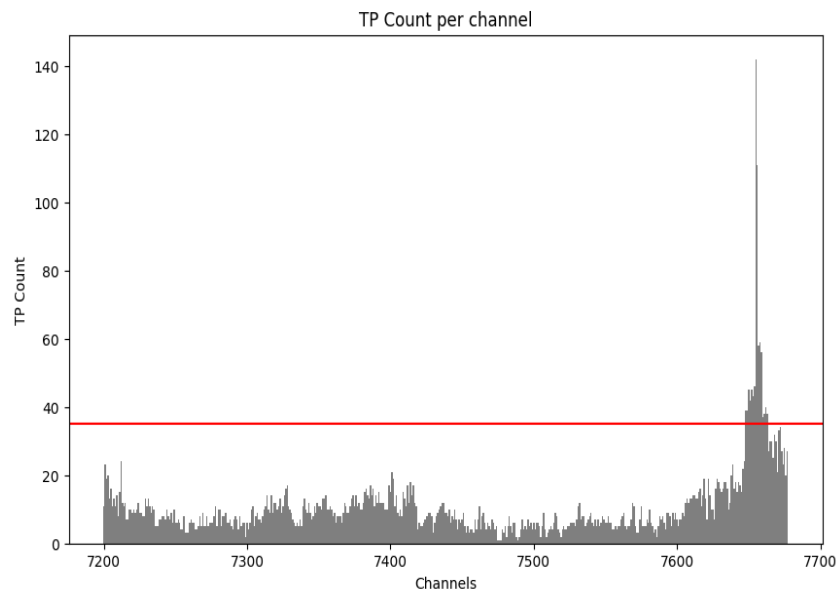23 August 2024

Samikshya Kar

Further Steps for Bismuth Physics

1. Raw data for APA 2 channels for run 026482 TR datafile

2. Analysis with more data: Need Rucio account to access PD2HD TRs: In progress (have been facing technical difficulties)

3. Set of Background TPs:

   1. Clustering to remove cosmics data

   2. Zoom in on Bismuth active region

4. Plotting the number Background TPs vs varying threshold (Hit finding) for different APAs

5. ADC integral plot of Signal and Background TPs

6. To get only Bismuth TPs: Subtraction the expected background TPs in the Bismuth region from all hits to estimate the distribution of only Bismuth TPs.

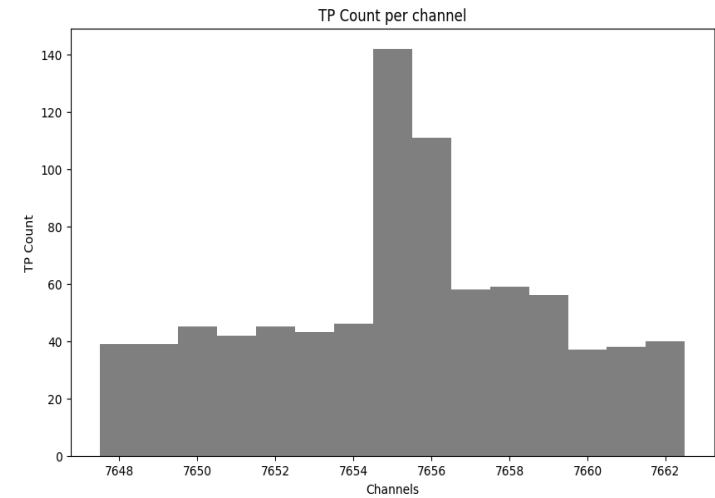7. Conversion of ADC integral to Energy and the 1D energy plot (needs further work)

Also: Offline reconstruction: Managed to log in to Fermilab machines
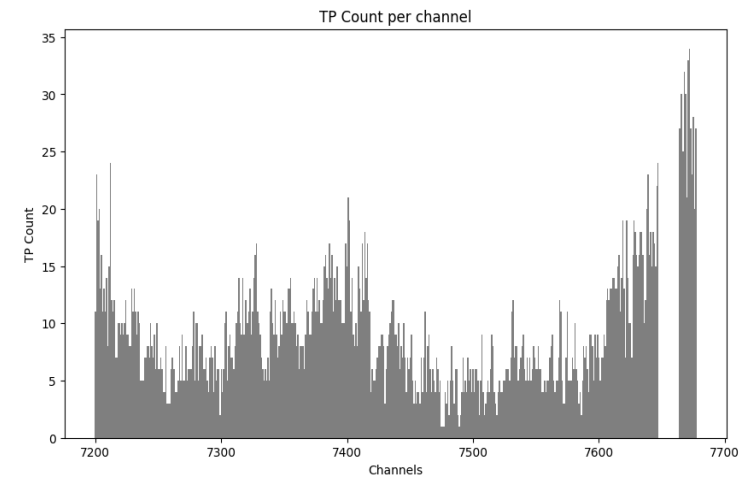
Background TP Count vs Threshold

- Datafile: run 026482 off beam data for APA 2

- Emulated Collection TPs

- Algorithm: Simple Threshold (=250)

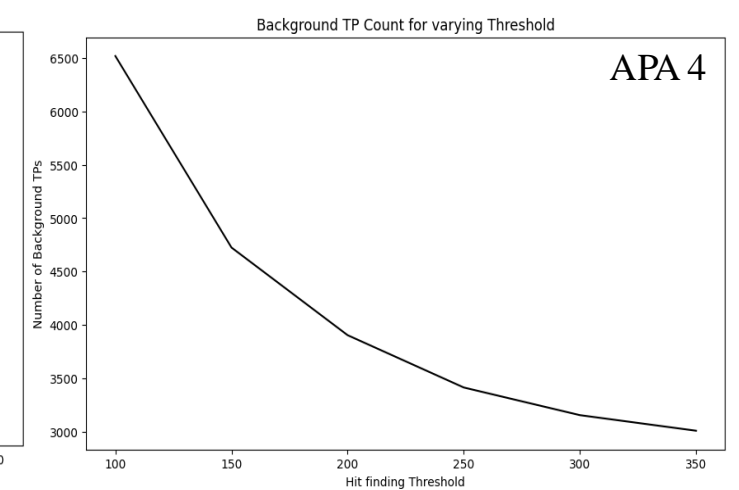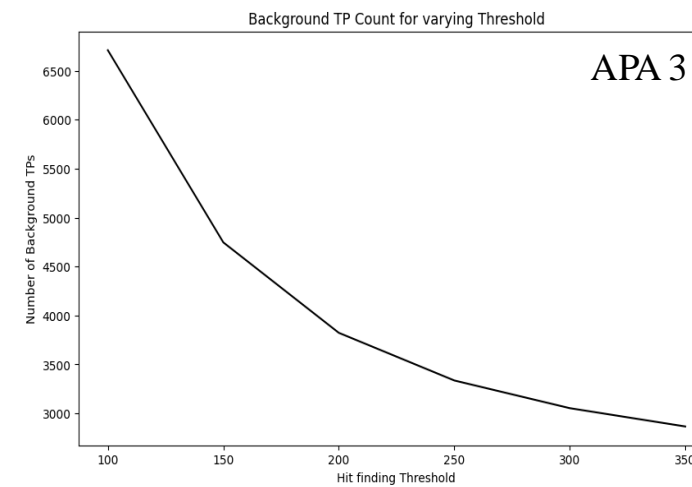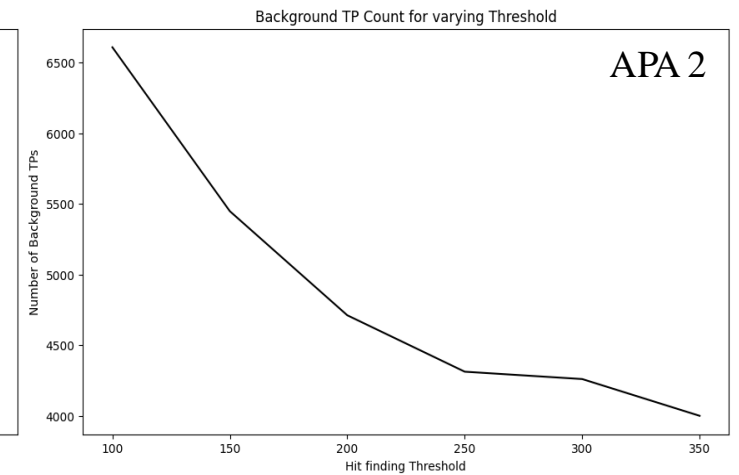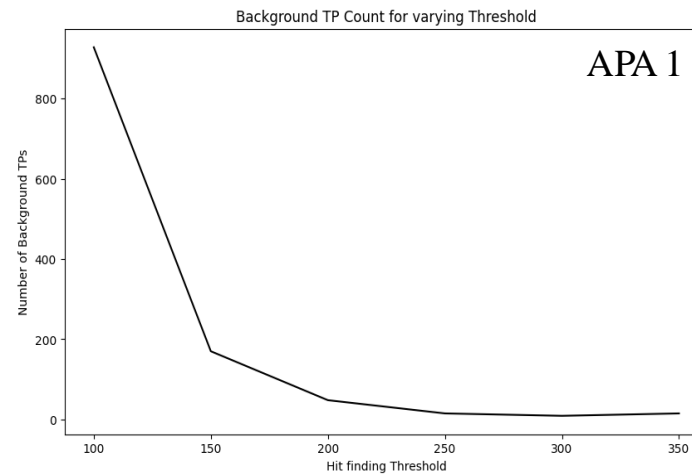_____ : Threshold to be considered Bi-207 active

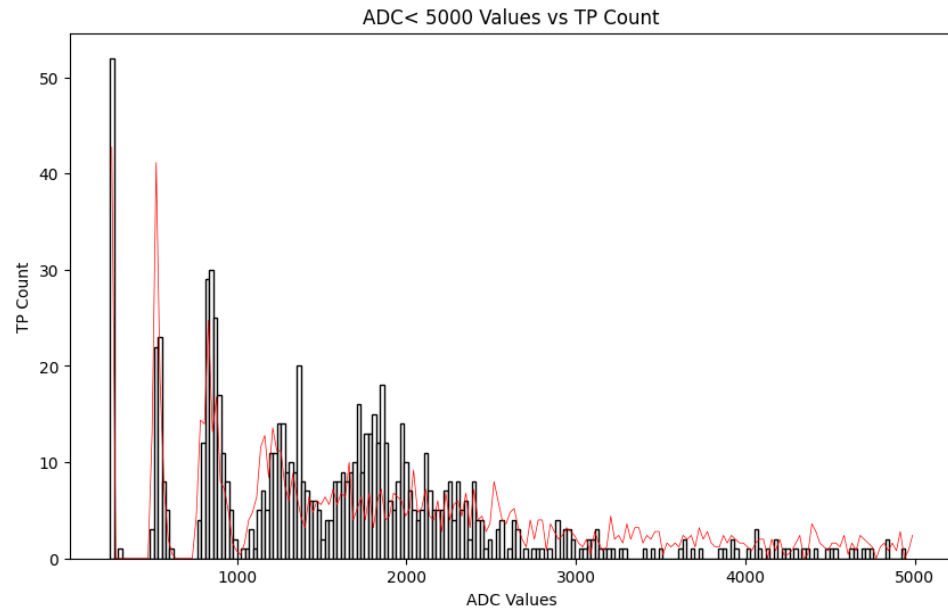

Signal

Background

Background TP Count vs Threshold

- Datafile: run 026482 off beam data

- Emulated Collection TPs

- Algorithm: Simple Threshold(=250)

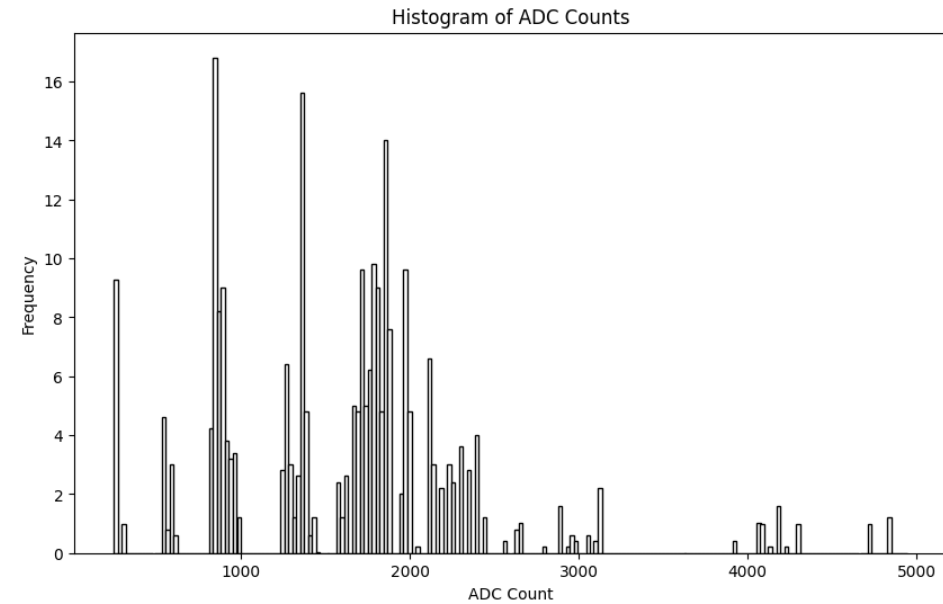# Background Subtraction

- Datafile: run 026482 off beam data

- Emulated Collection TPs
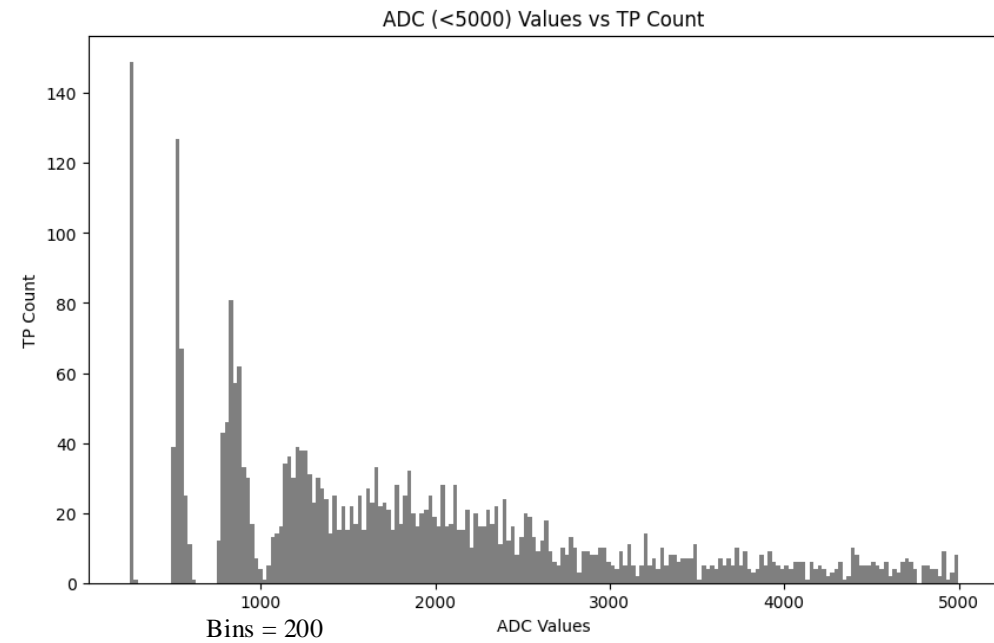
- Algorithm: Simple Threshold (=250)
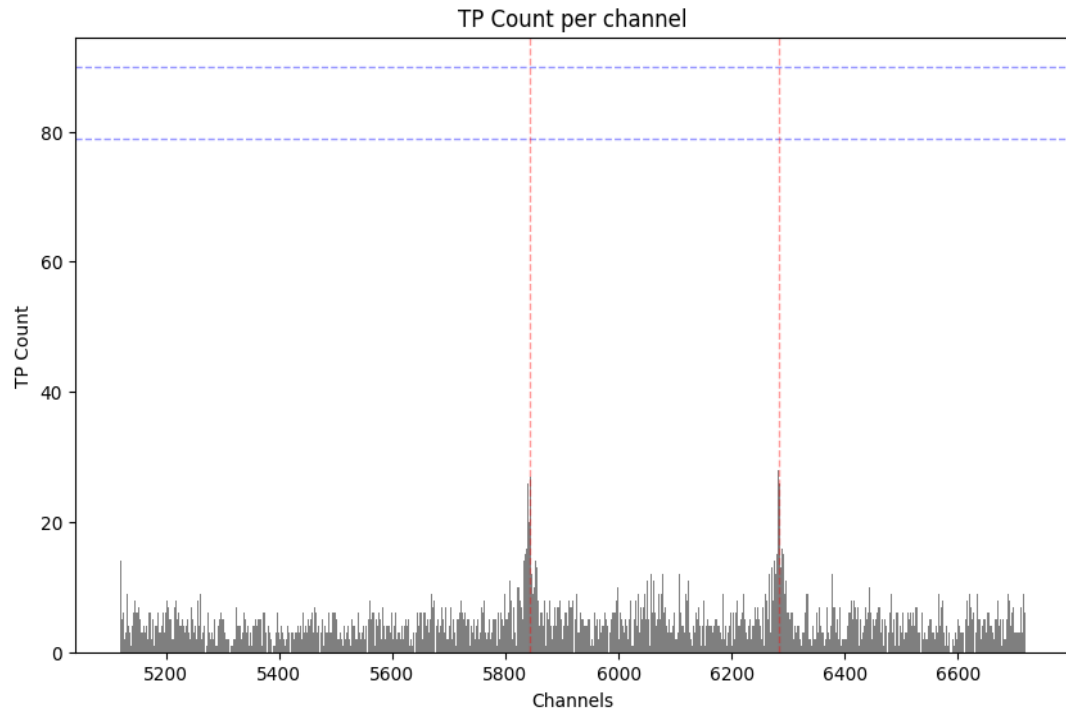

Bismuth region with background

highlighted in red ____

Background subtraction and retention of
only signal TPs
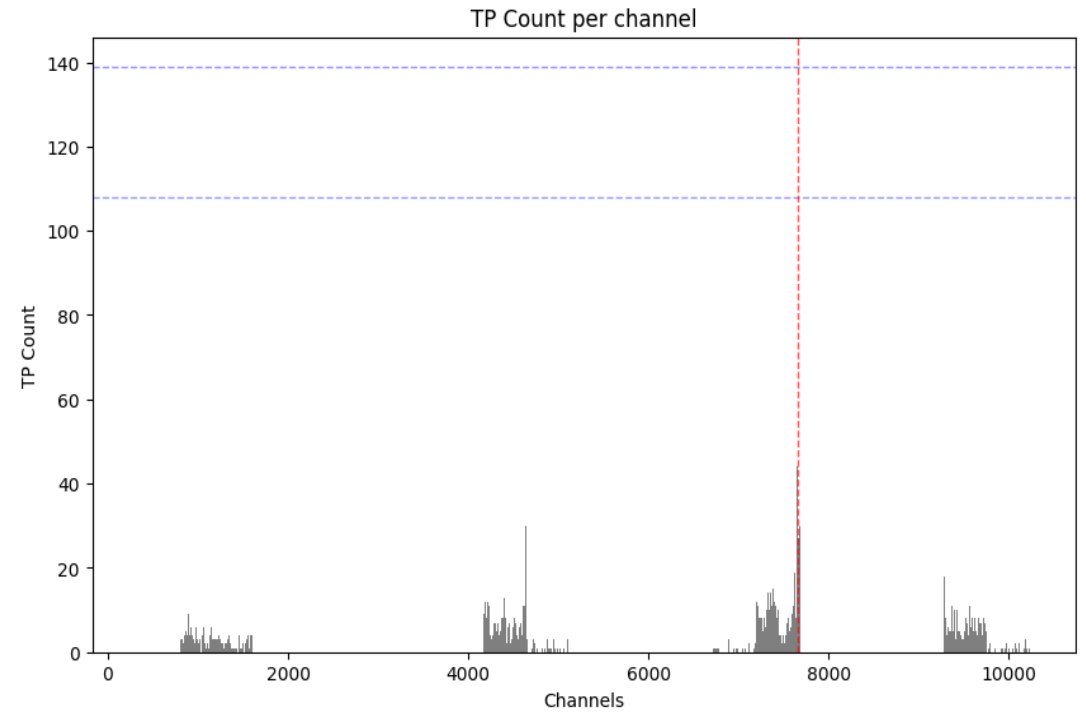
Background TP ADC Histogram

ADC integral of Background
emulated collection TPs from APA 2

TP Count per channel

Induction plane

Collection plane

THANK YOU!