Beam Update

Logbook Entry:
https://logbooks.jlab.org/entry/3939770

Phoebe Sharp 11/10/21
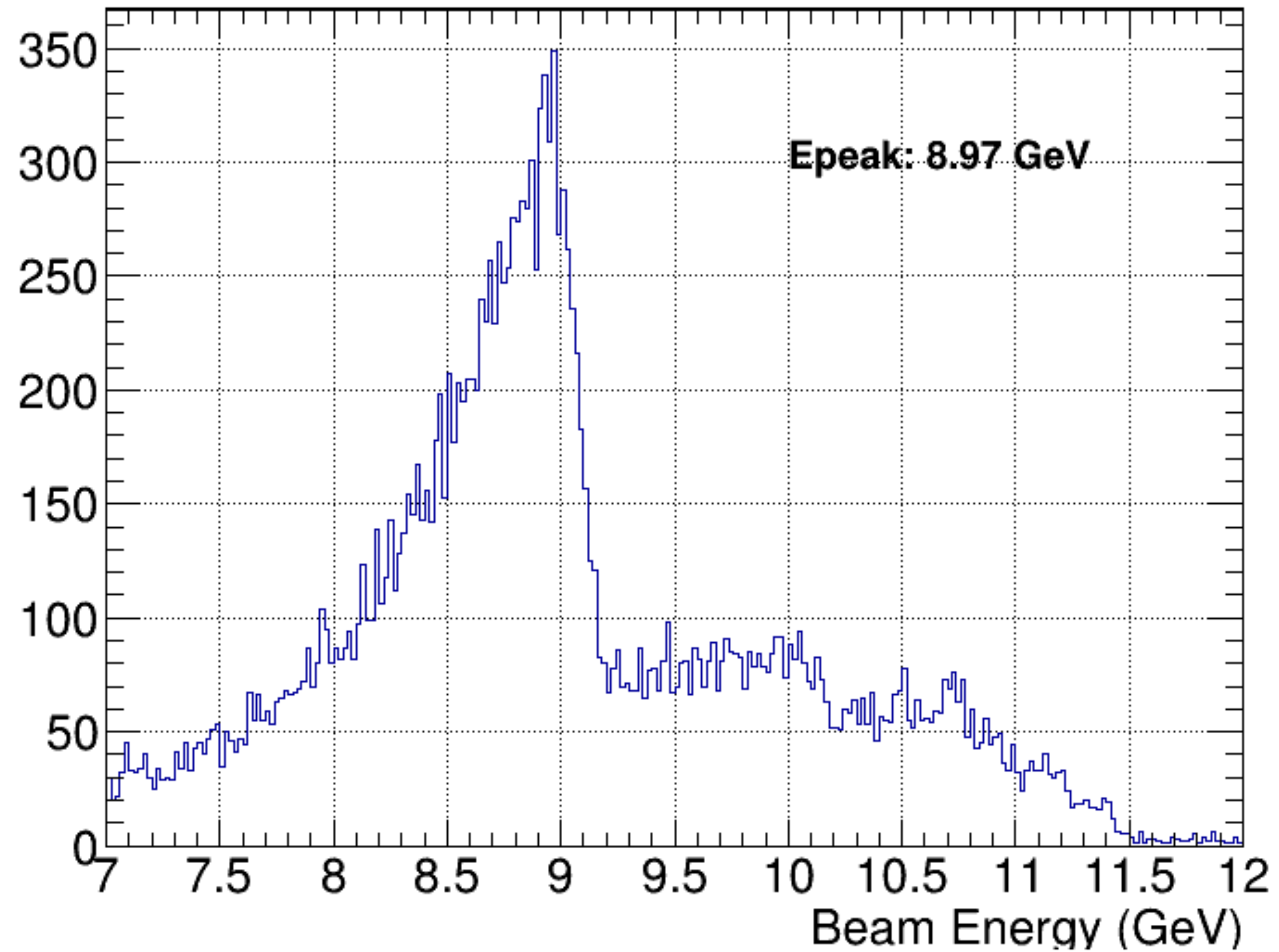
Coherent Peak is at the hodoscope
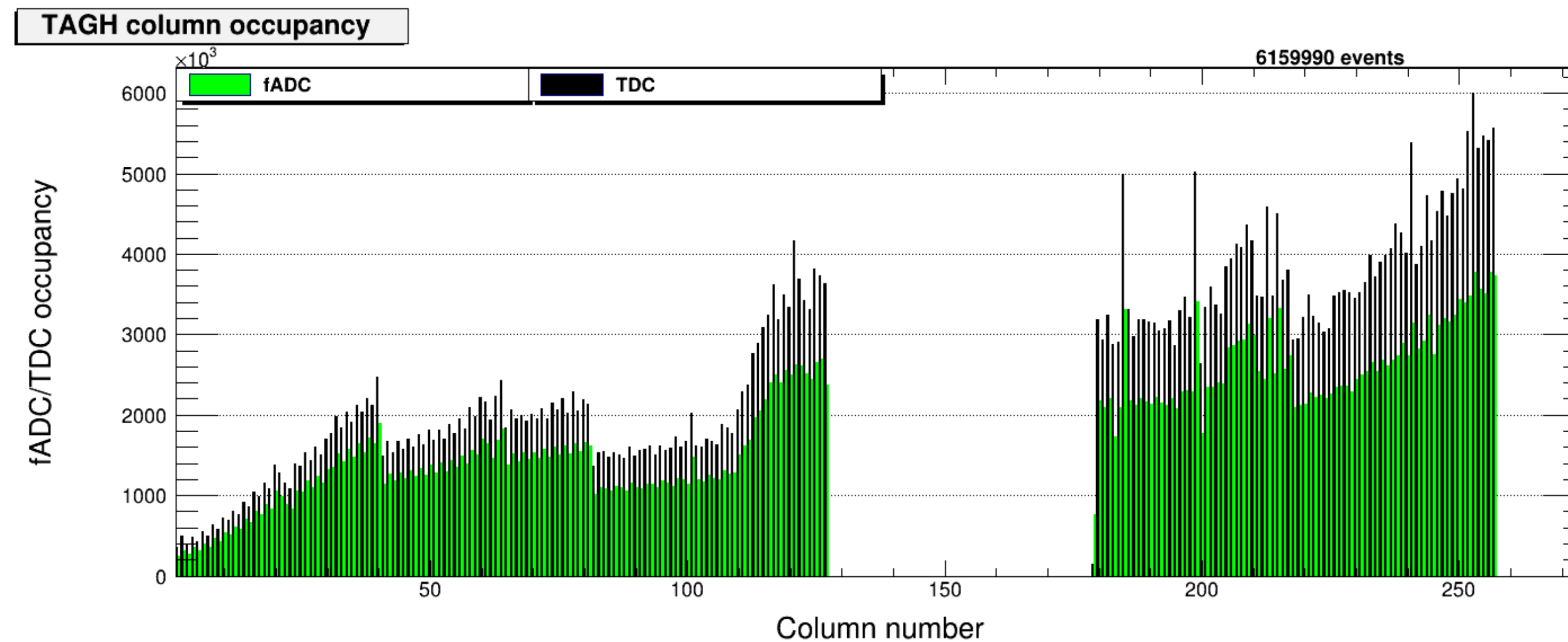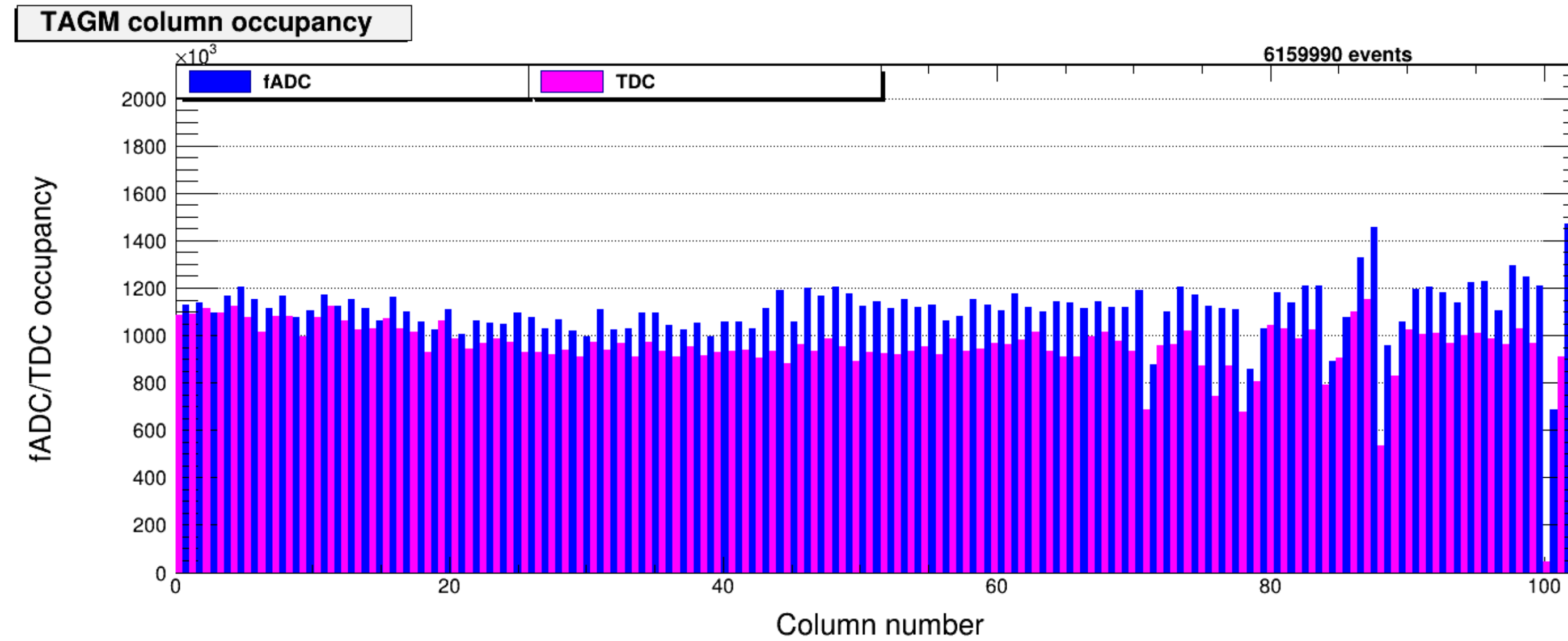
Beam Energy

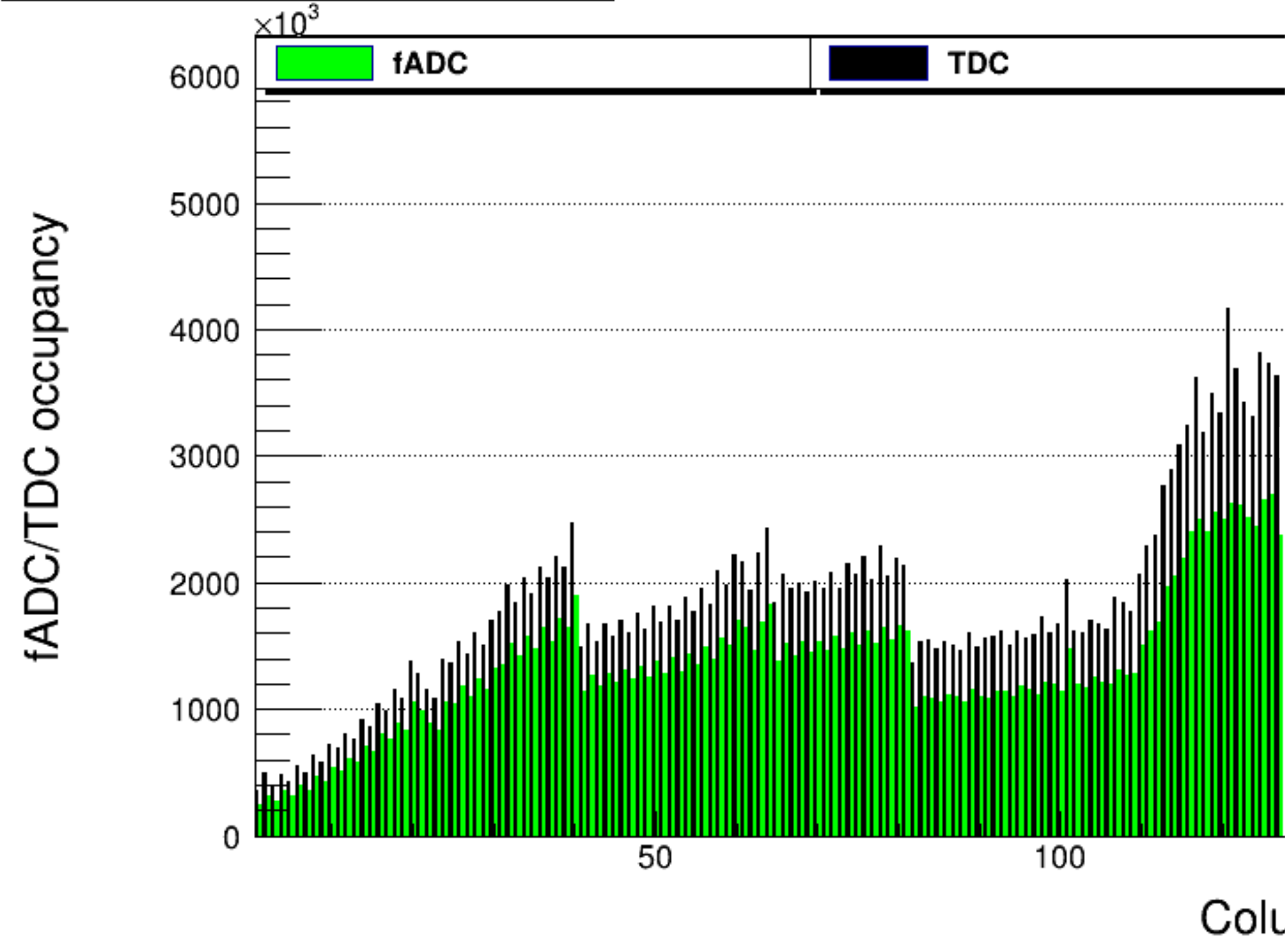Reconstructed PS Beam Energy

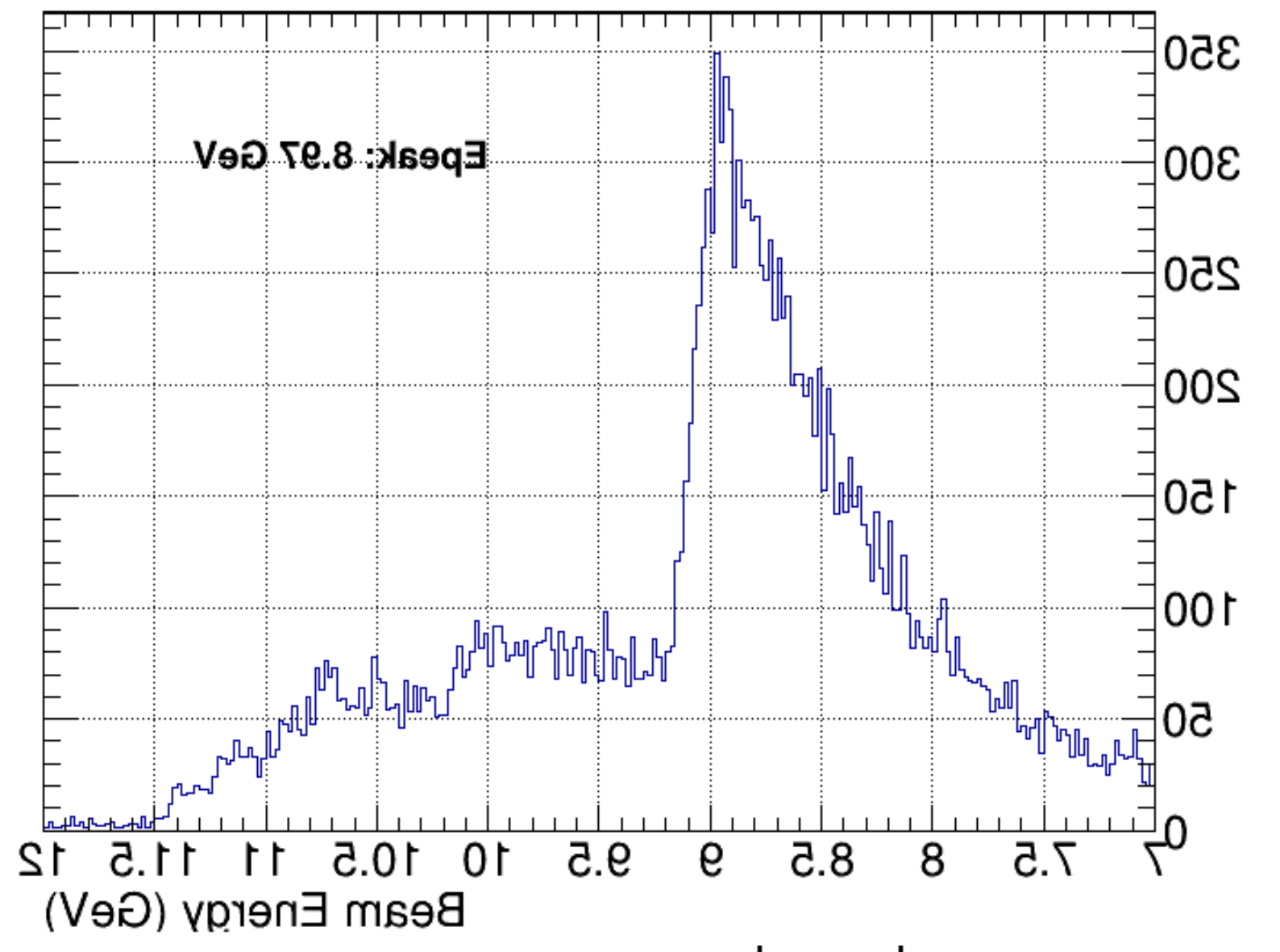Epeak: 8.97 GeV

Tagger

Run 90059

TAGH column occupancy

fADC   TDC

Reconstructed PS Beam Energy

Epeak: 8.97 GeV

Beam Energy (GeV)

TAGM column occupancy

6159990 events

Run: 90059

fADC   TDC

6159990 events

Column number
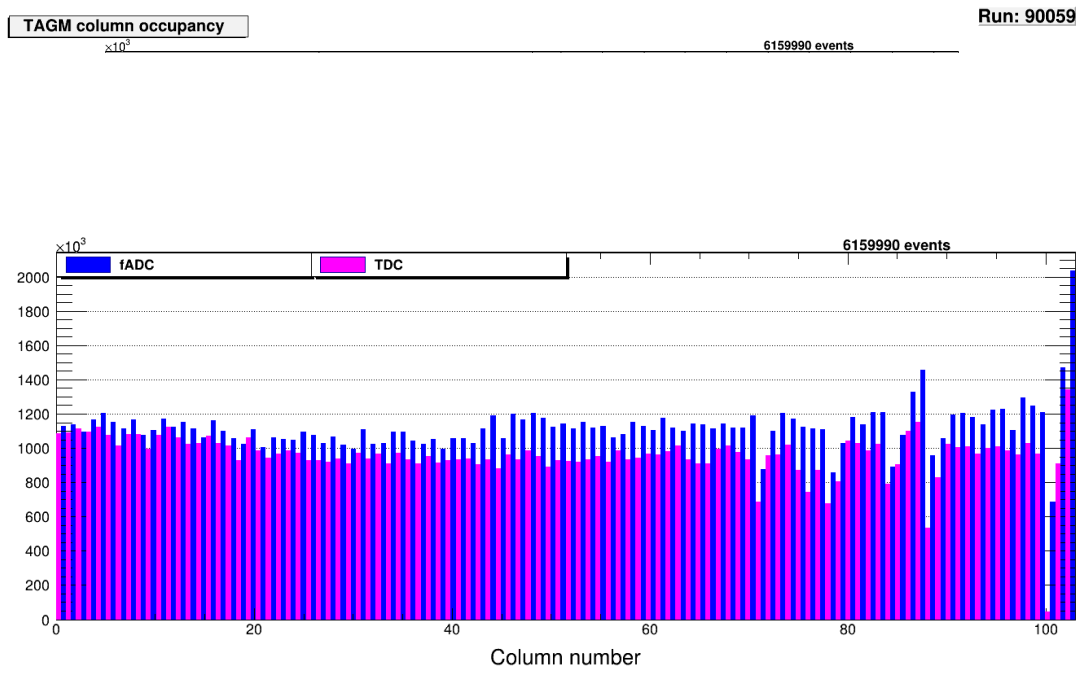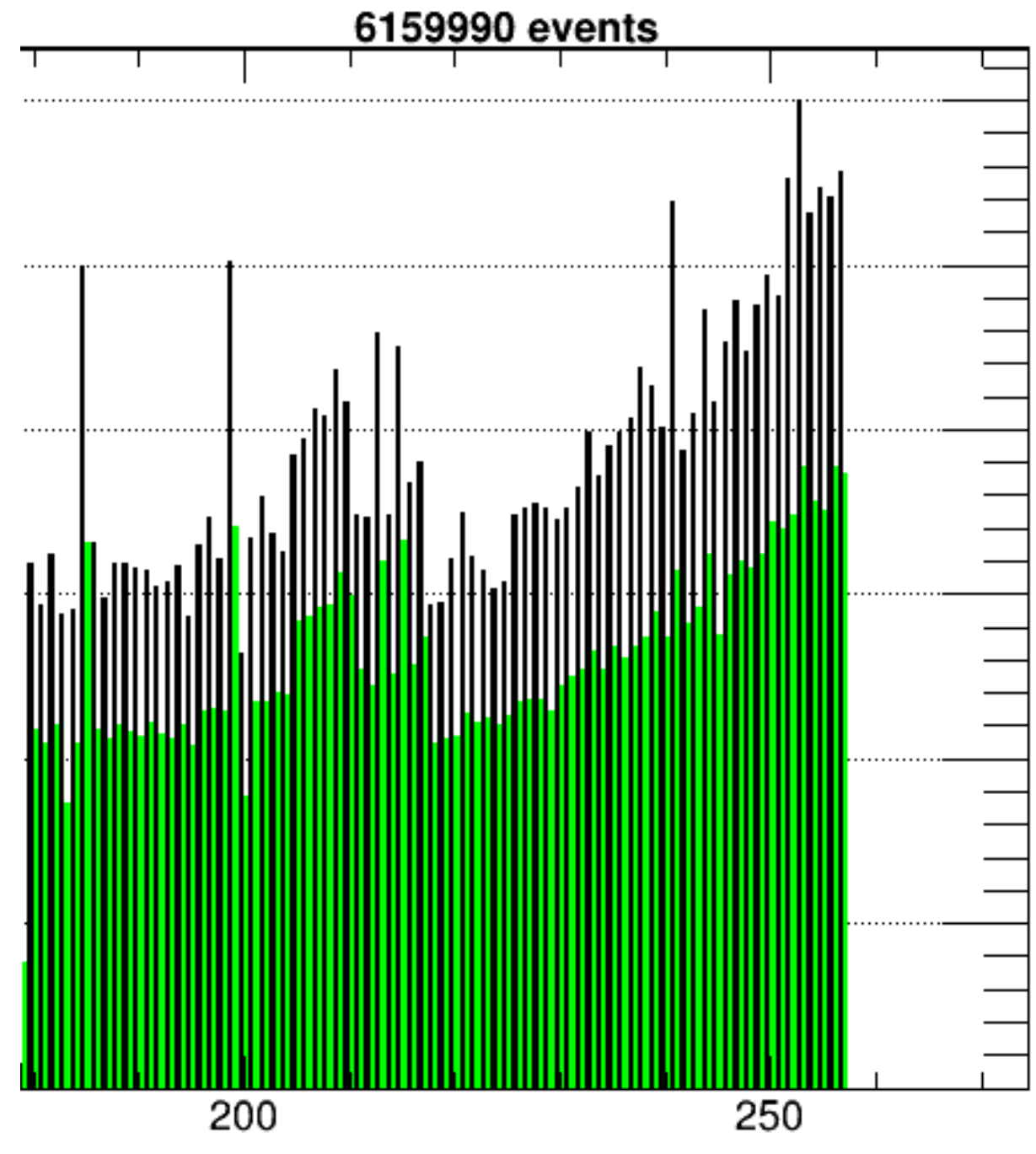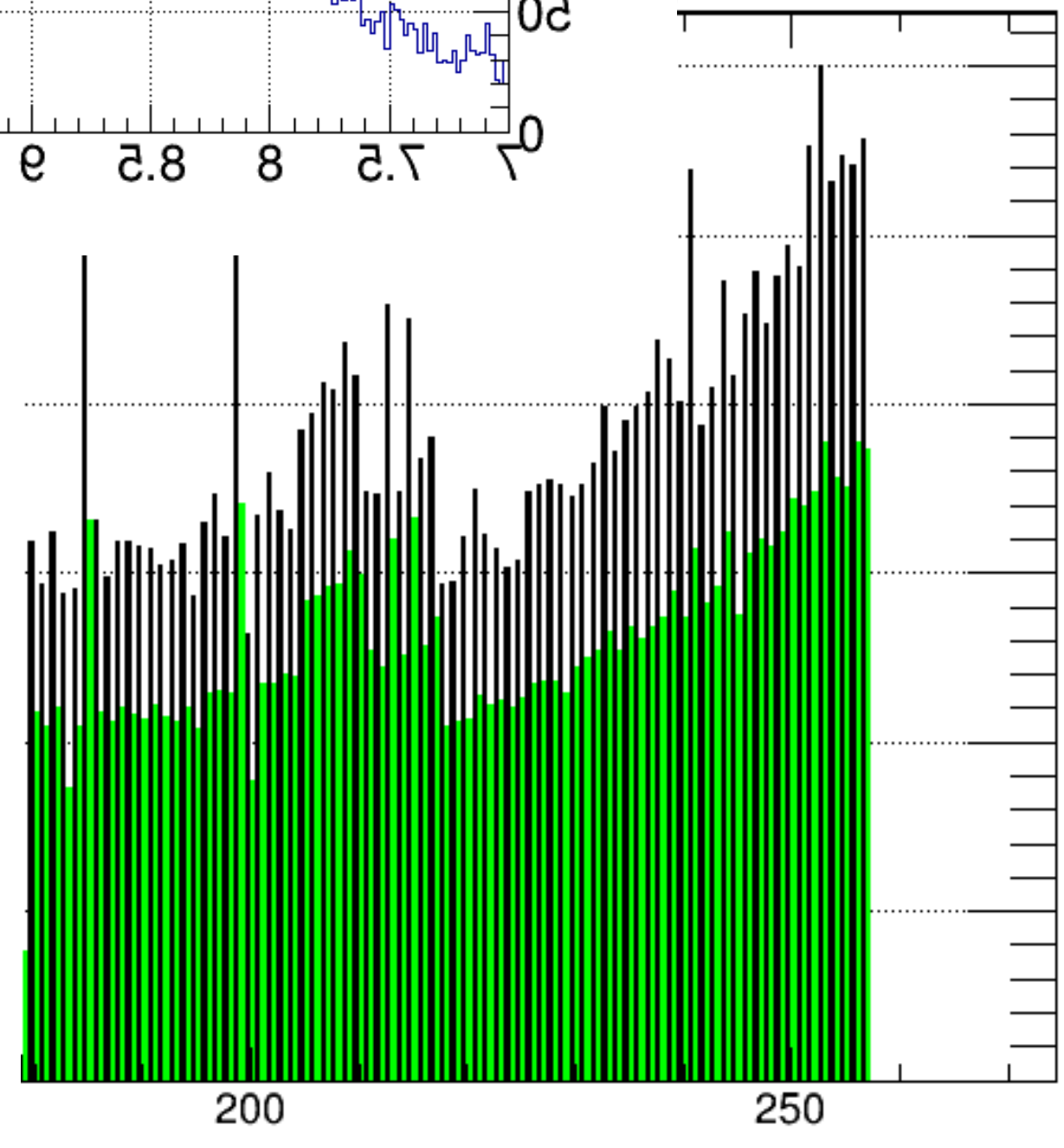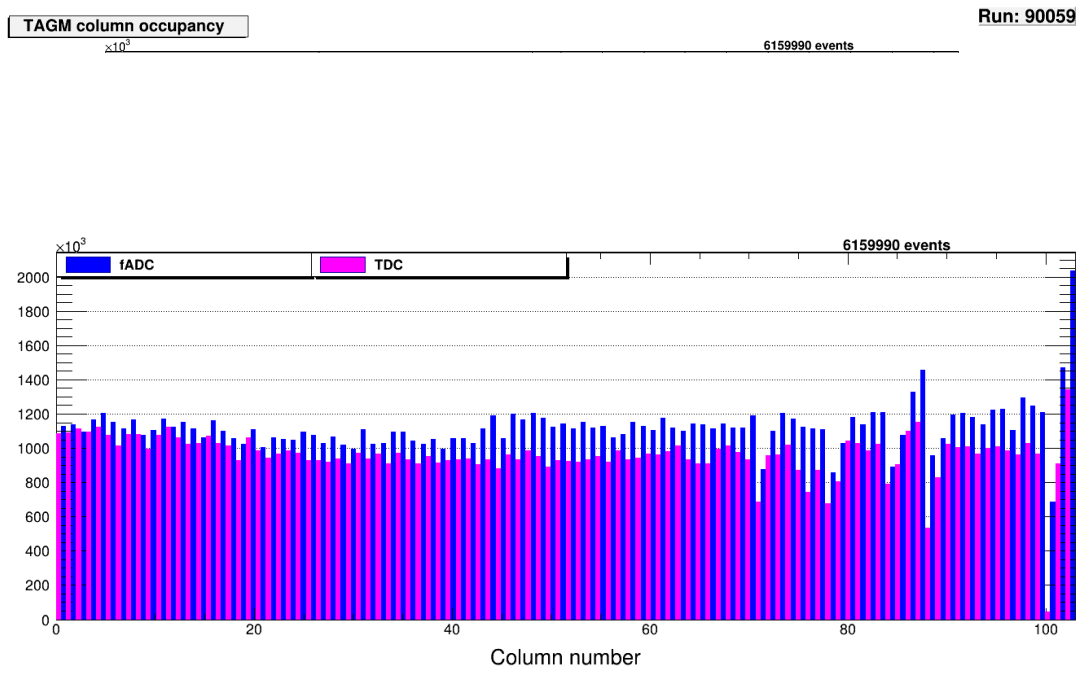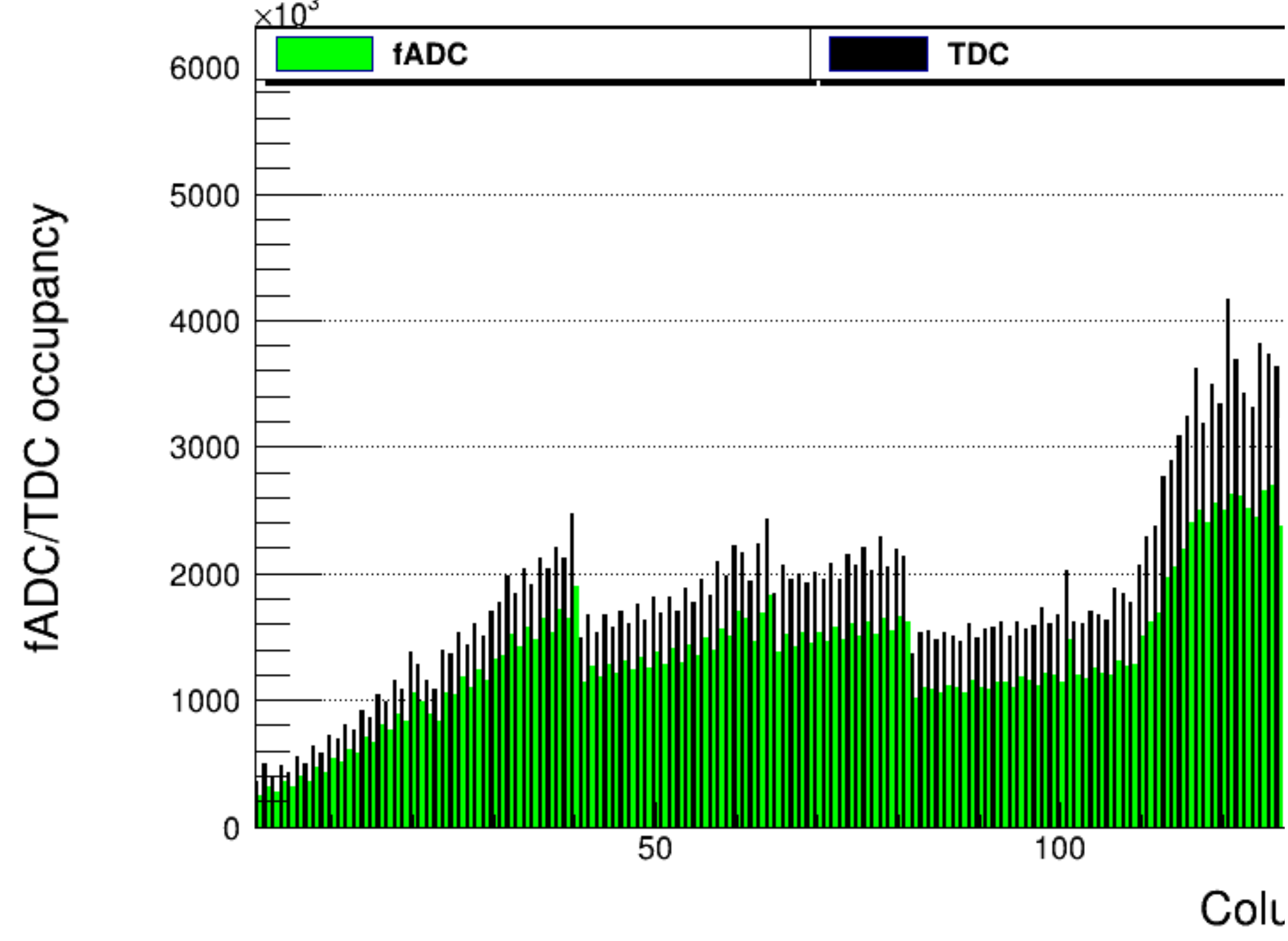
Notes

- Coherent Peak is set at 8.6 GeV

  - Making the plateau region from FOM (slide 8) over the Tagger microscope

- Peak in microscope region is at 8.2

  - Coherent will go to smaller energy

  - Set peak where is at the plateau

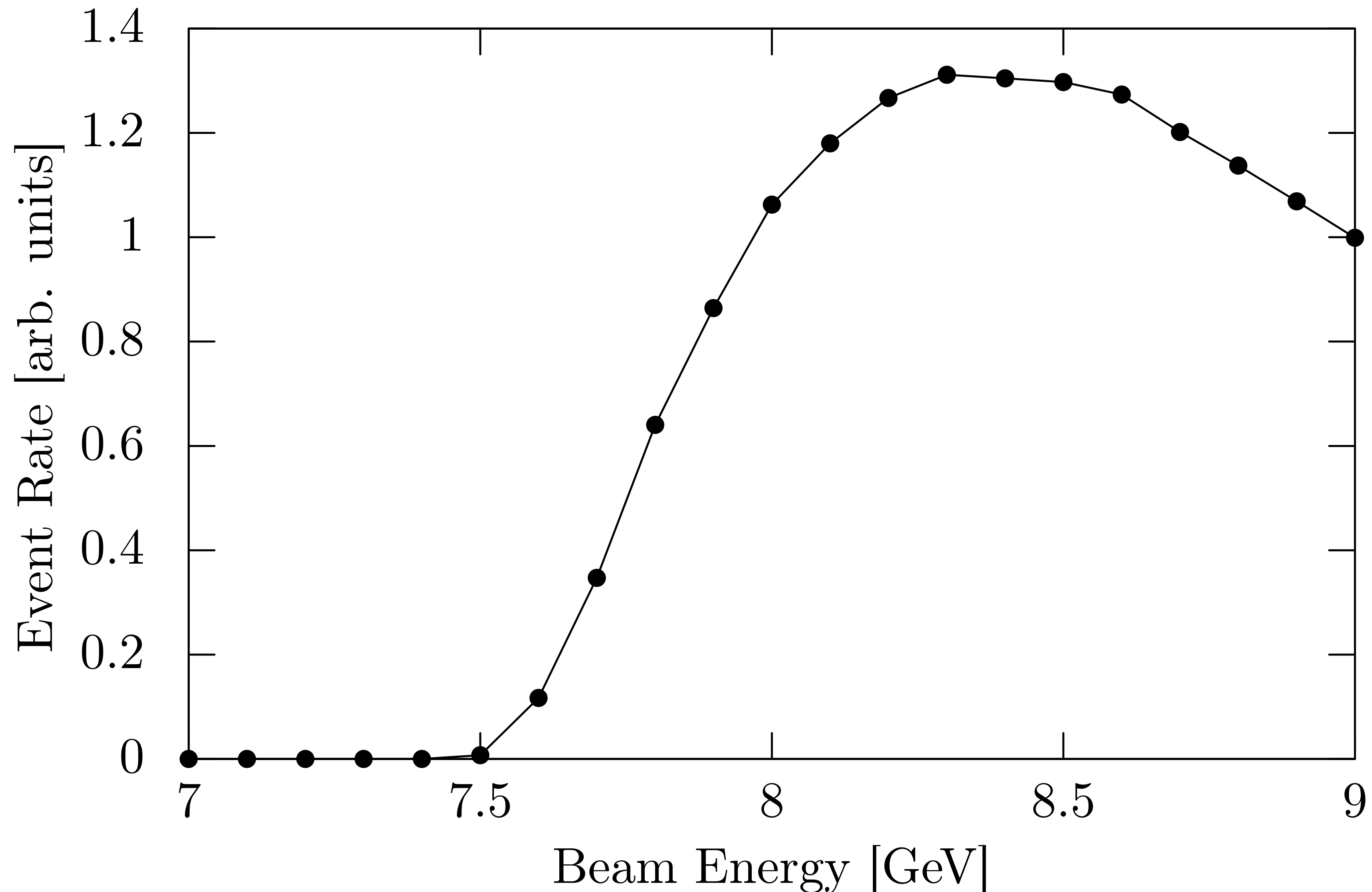 - Keep peak at same position between para and perp radiator configurations

PS Beam Energy Plot

Email Sasha with questions about this plot
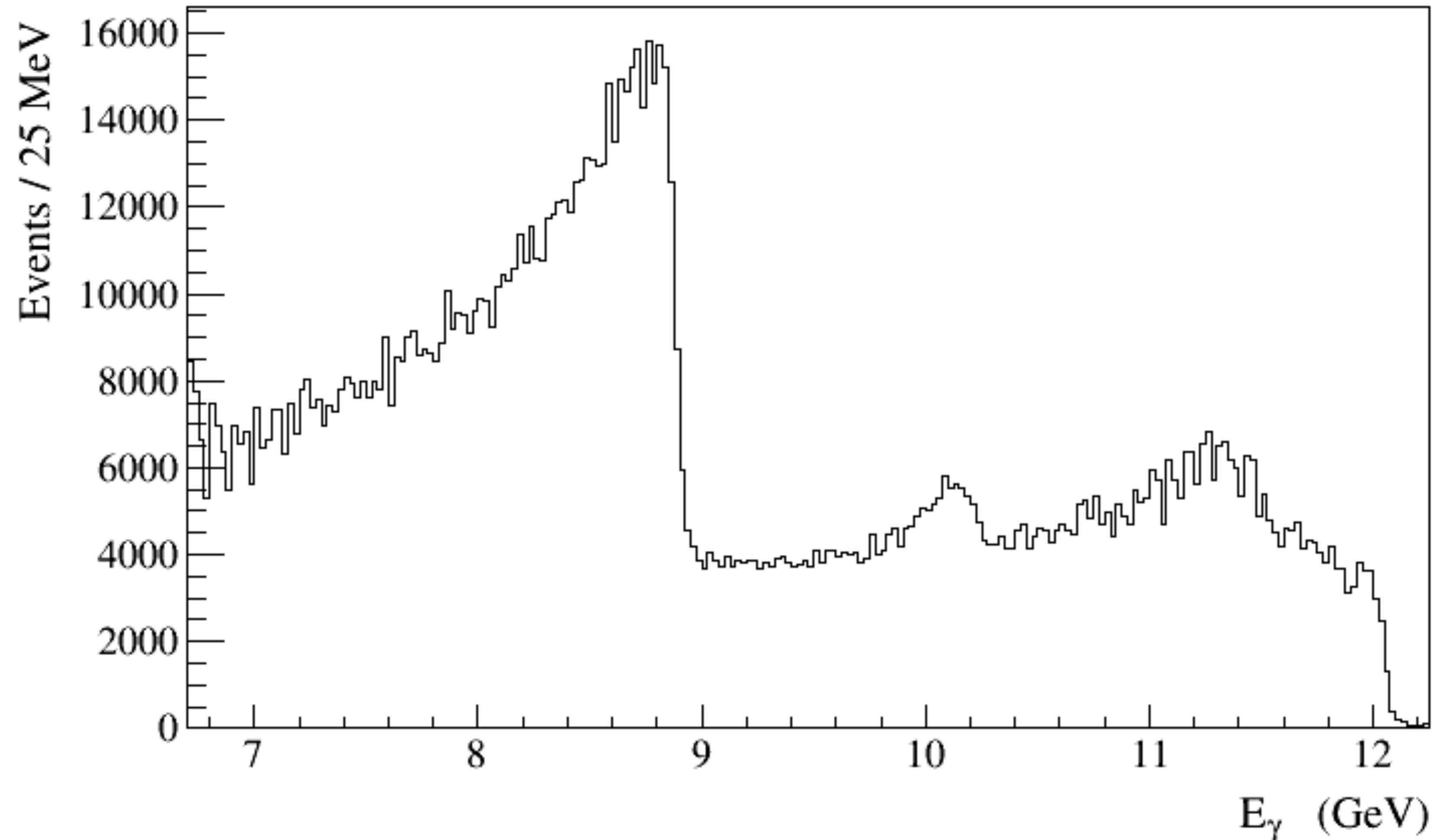
FOM from Simulation

Rate of $|t| > 2$, $|u| > 2$, $|p_{rel}| > 200$ MeV Events

Radiator Configurations

- AMO (4.5 E-4 Al)

- JD 0/90 PARA

- JD 0/90 PERP

- JD 45/135 PERP

- JD 45/135 PARA

Notes on Radiator Configuration Plan

- Going from para to perp takes times

- Changing between configurations take some time, but fast

- Energy spectrum goes 1/E on AMO radiator

  - Need reference plots on AMO

  - Don't need it all of the time, but continue to iterate over different orientations of the crystal

  - Would make sense to use AMO for the

- At the moment, make sense to alternate polarization settings for each run, over deuterium, collect data over all configurations for that target.

  - Do some reference runs when over all targets?

  - Over 2-3 runs in helium, avoid AMO in deuterium runs

  - One AMO is over 20% of runs.

Overview of Coherent Brem. Peak GUI

Coherent Peak Modification

Rate of $|t| > 2$, $|u| > 2$, $|p_{rel}| > 200$ MeV Events

TAGH column occupancy

TAGM column occupancy