

# **Tagger update**

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# Purpose

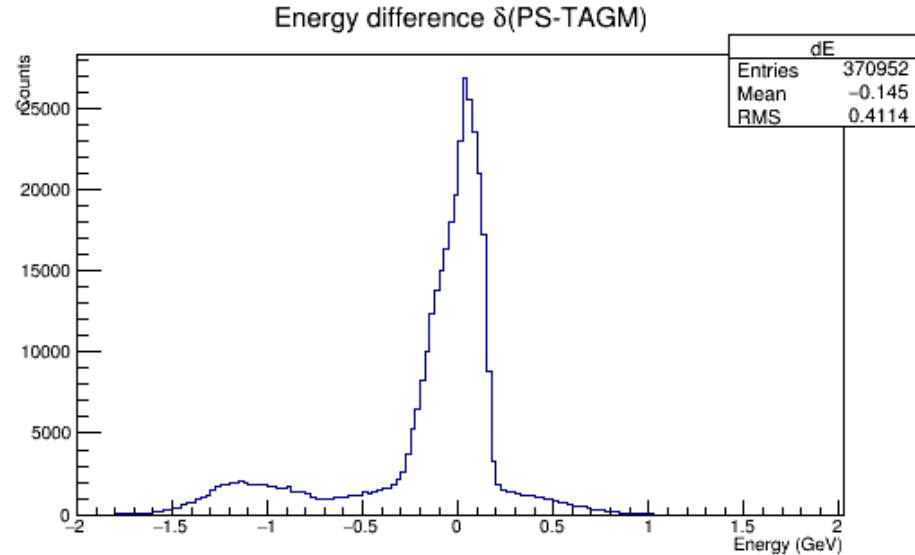
- Nathan showed an efficiency plot with an asymmetric distribution and overlap between tagger detectors
- Richard and I discussed possible causes
  - calibration issues
  - radiative effects
- Investigate by examining energy difference between PS and TAGM

# Run 3185

- J1a50 ( $3.3 \times 10^{-4}$  RL)
- $1 \times 10^{-4}$  RL converter
- 20 million events
- FCAL\_BCAL\_m7.conf trigger

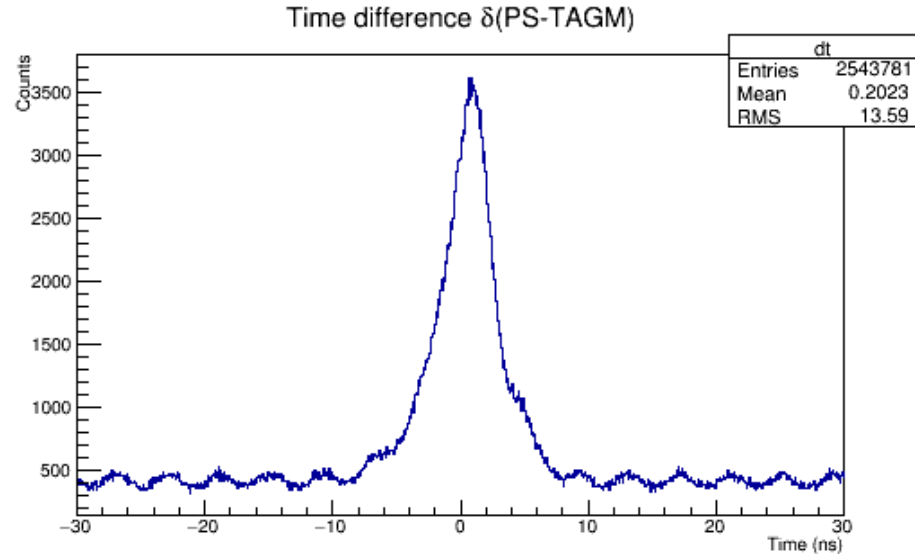
# Energy distribution

- Energy difference  
PS - TAGM
- No background subtraction
- Require TAGM to have ADC and TDC signals



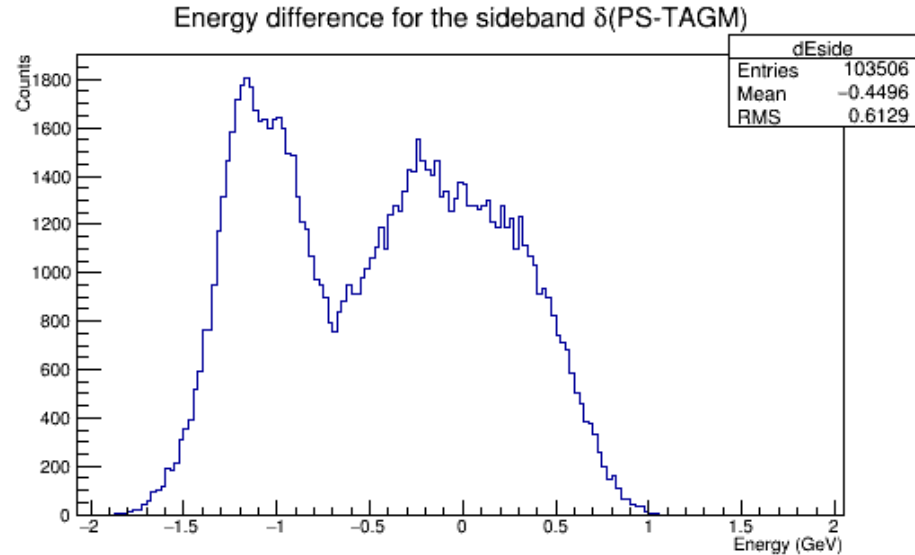
# Time distributions

- Time difference distribution for PS - TAGM
- RF 4ns ripples visible



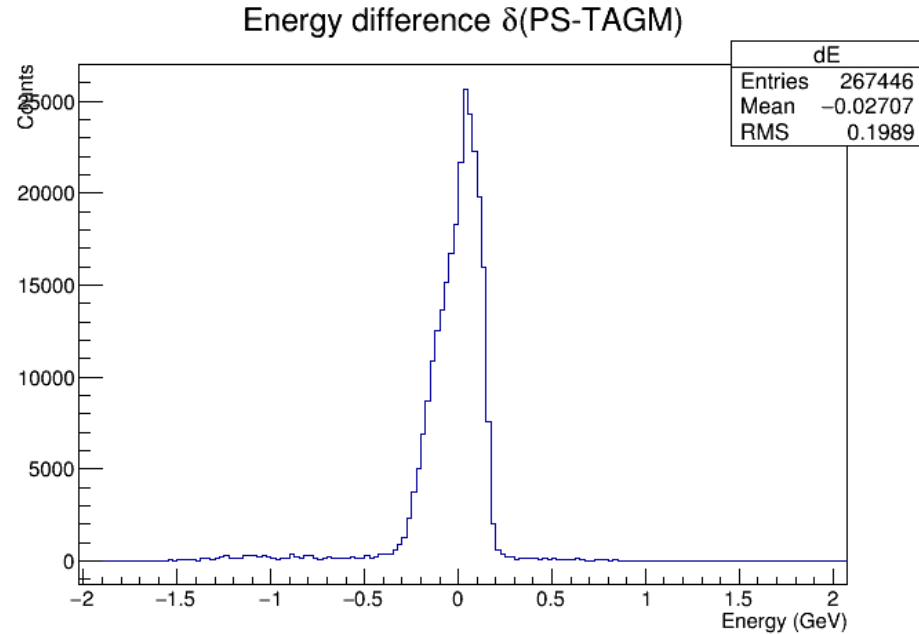
# Sideband

- Energy difference PS - TAGM in the sideband
- $-26 < t < -11$  ns



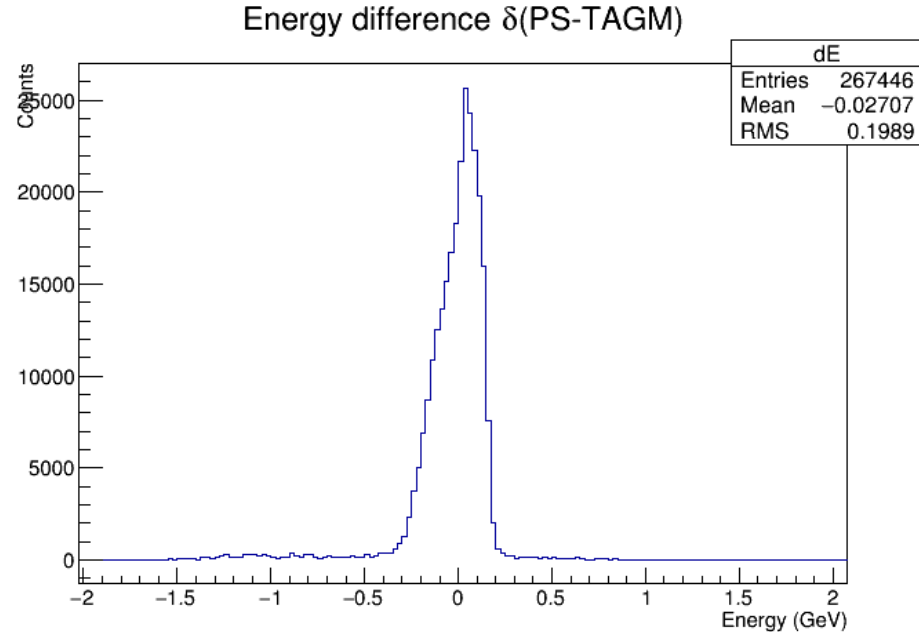
# Energy difference

- Sideband subtracted energy difference PS - TAGM
- Peak around -1.25 GeV removed
- Asymmetric distribution



# Energy difference

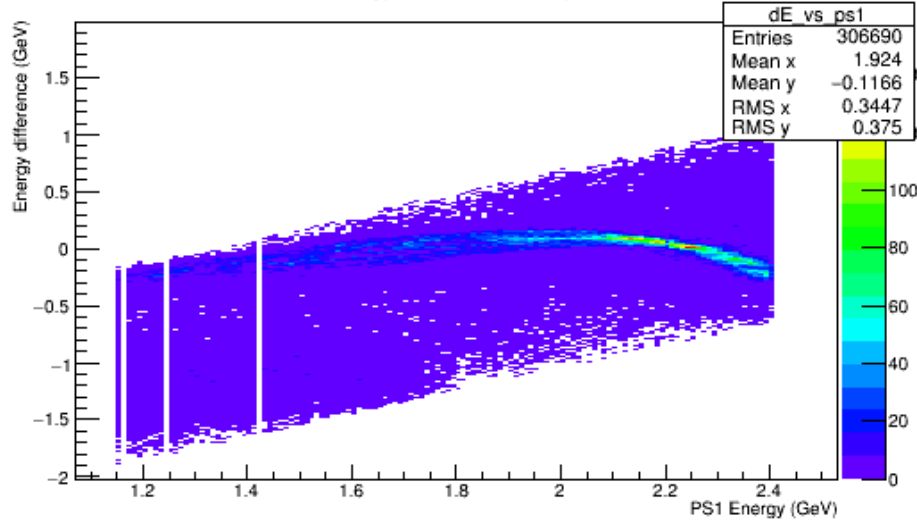
- Radiative effects would be proportional to radiator thickness
- Left side should be broader
- Need to compare with MC



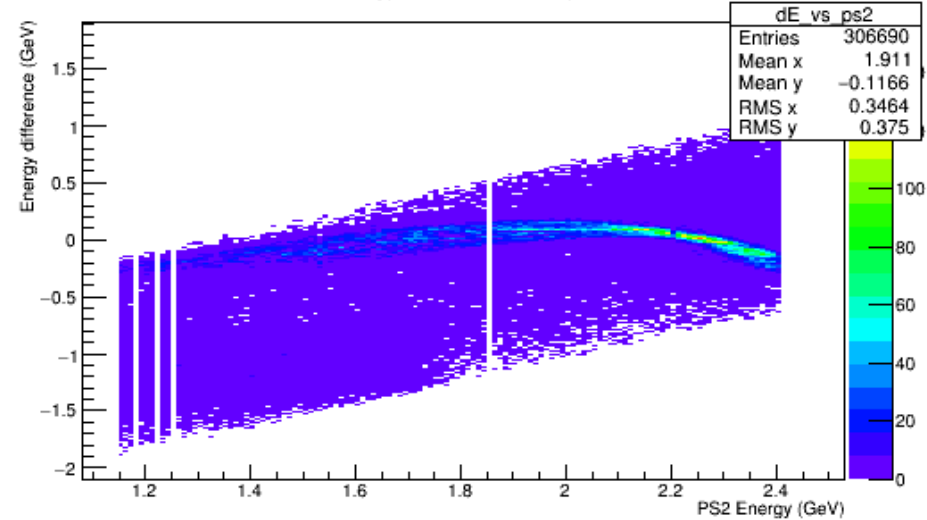


# Energy difference against each PS arm

Energy difference vs ps1



Energy difference vs ps2



# PS energy distributions

