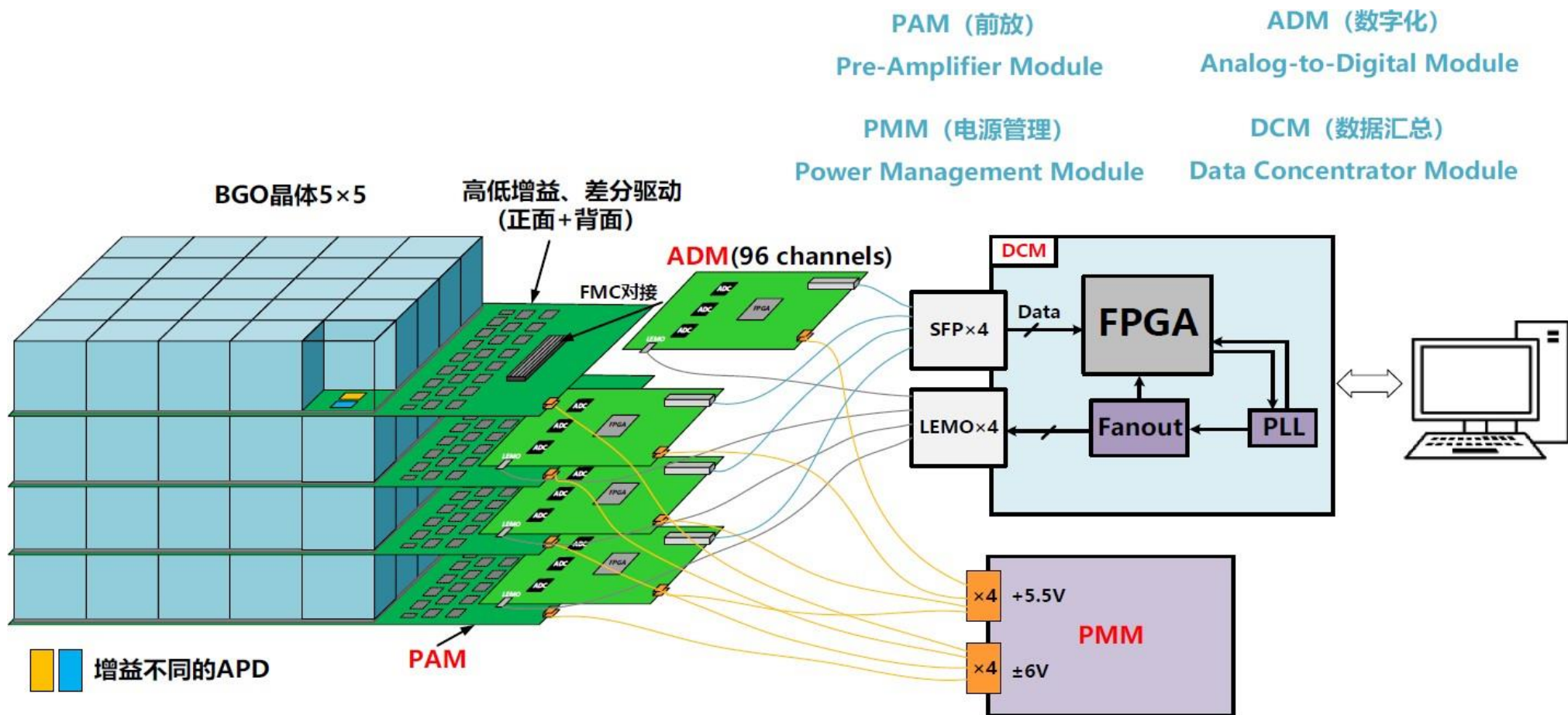


HEIC-Cube PS beam test data analysis

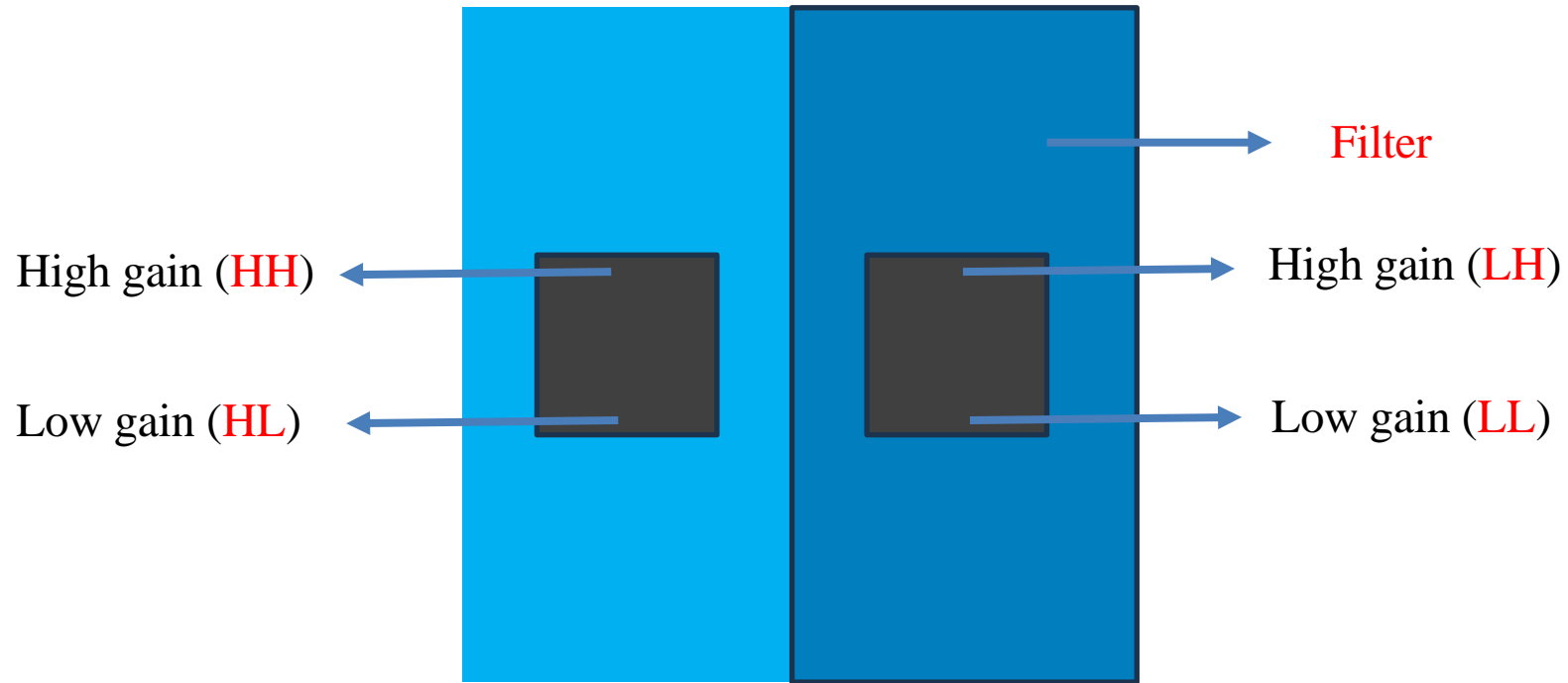
Yanshuo ZHANG

2023.11.03

HEIC-Cube structure



Readout scheme of HEIC-Cube

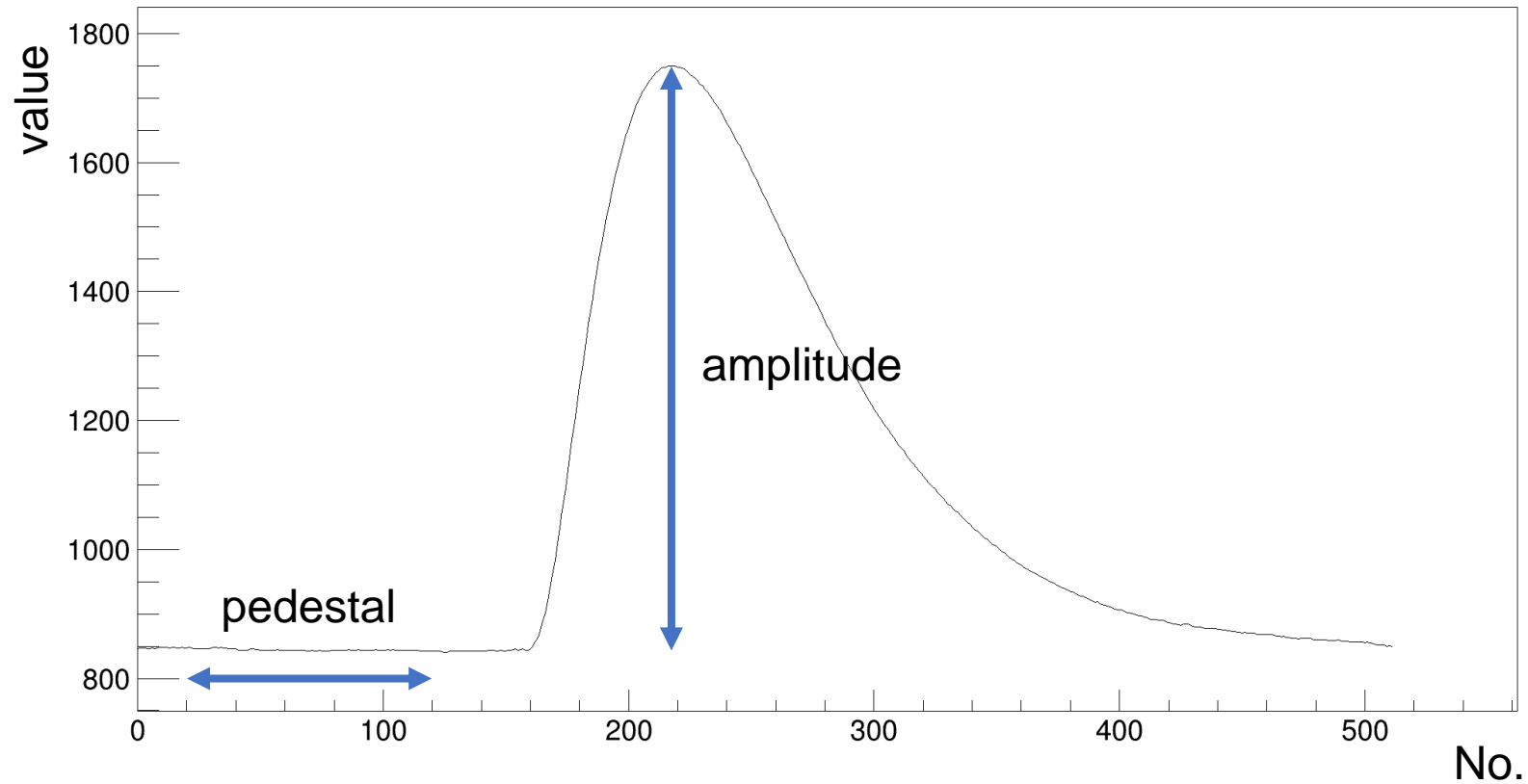


Different APDs use **filters** to realize high-low gain.

One APD realizes high-low gain by **electronics**.

Waveform sampling

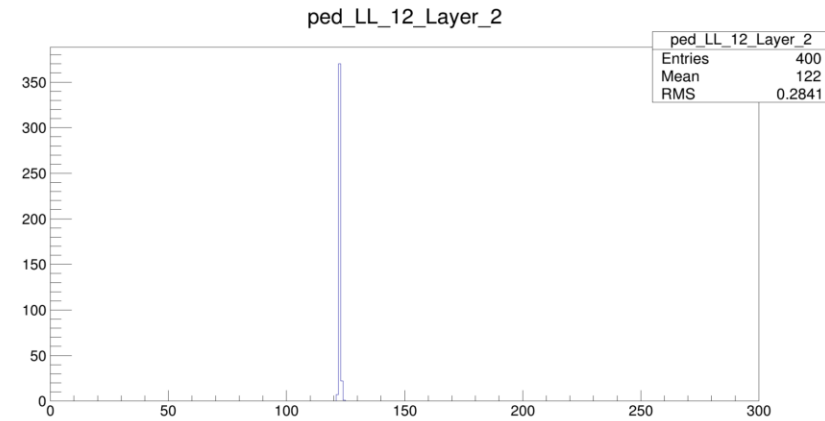
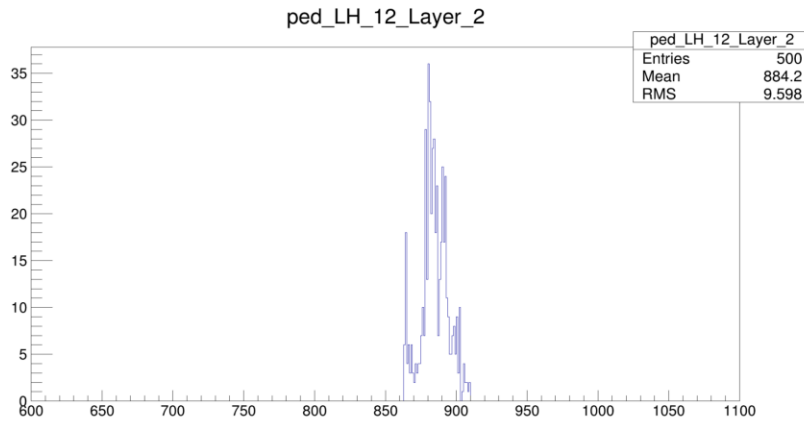
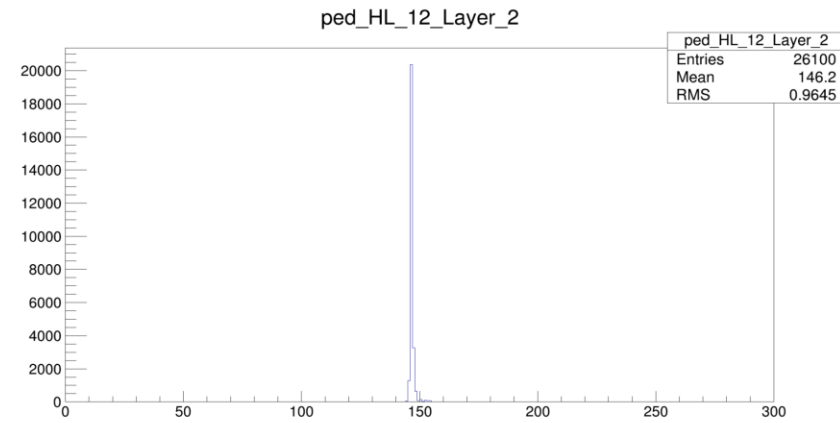
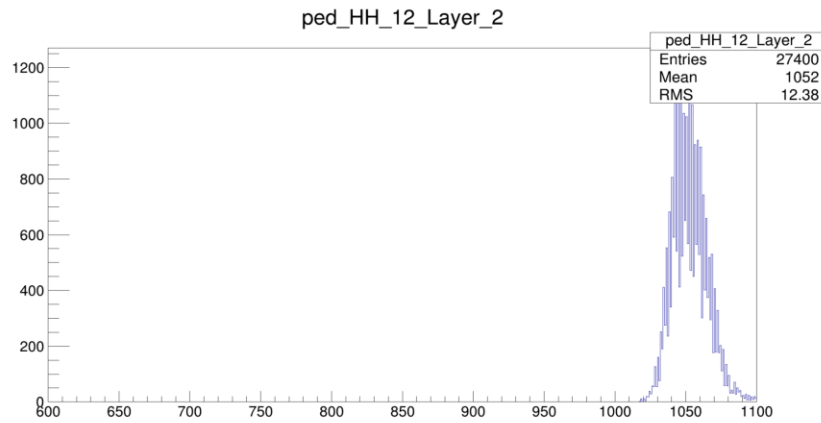
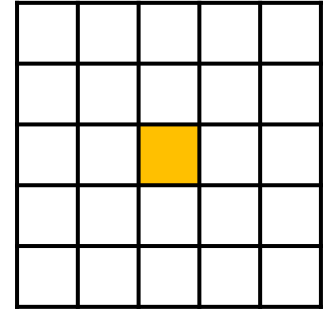
Particle	Energy (GeV/c)	Total Counts
e^-	1, 2, 3, 4, 5	1,012,152
μ^-	5	327,294
π^-	10, 12	409,269
γ	1	7,890



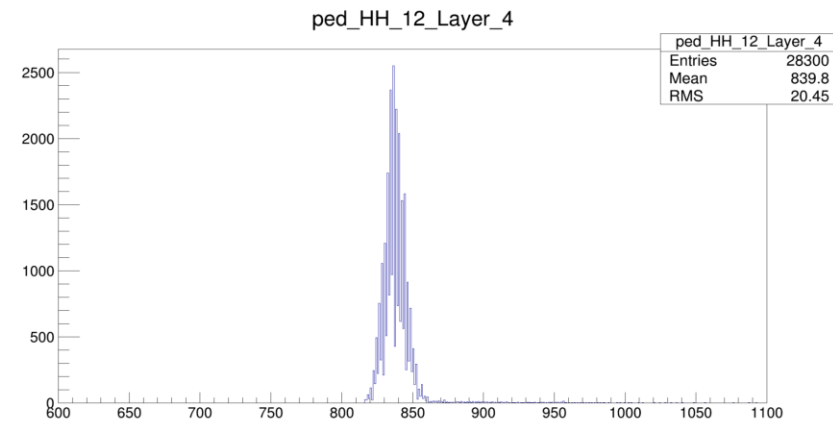
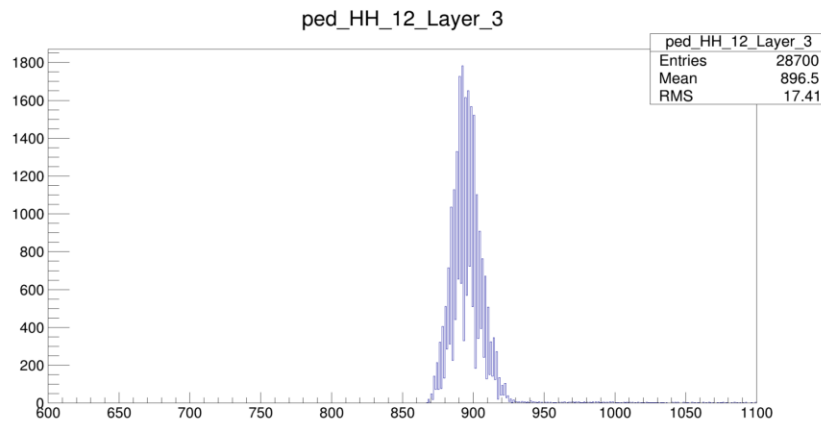
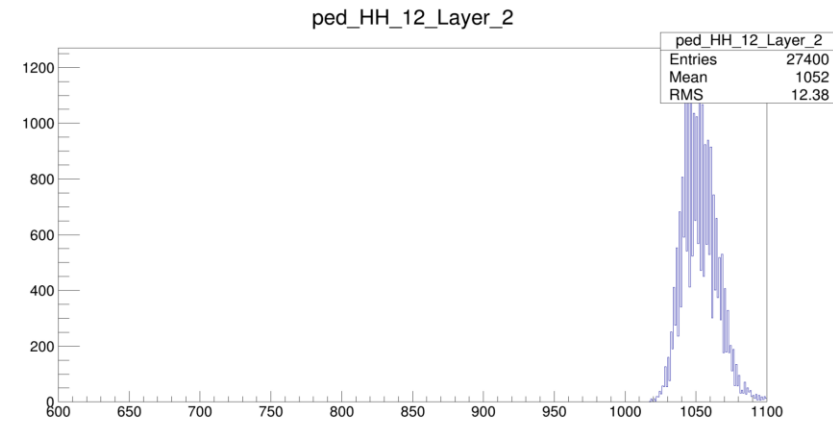
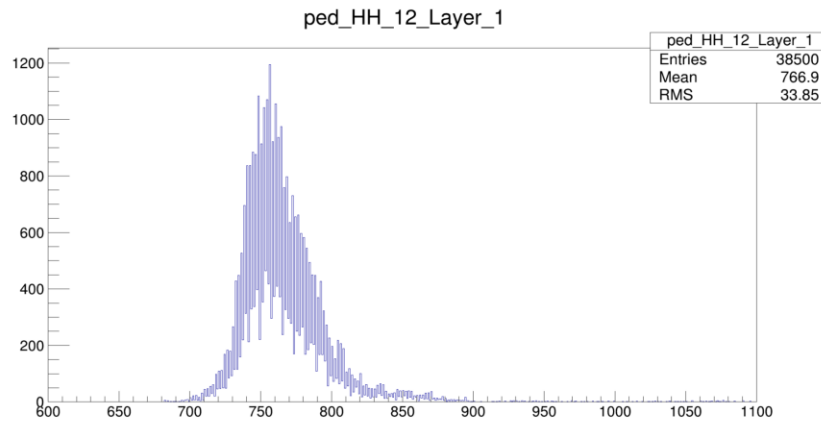
Muon data summary

- 汇总了 25 个等间距位置扫描的数据文件，粒子入射位置分别位于 25 个小晶体的中心，RunID 从 10004 到 10032，总共获得 192686 个有效事例。

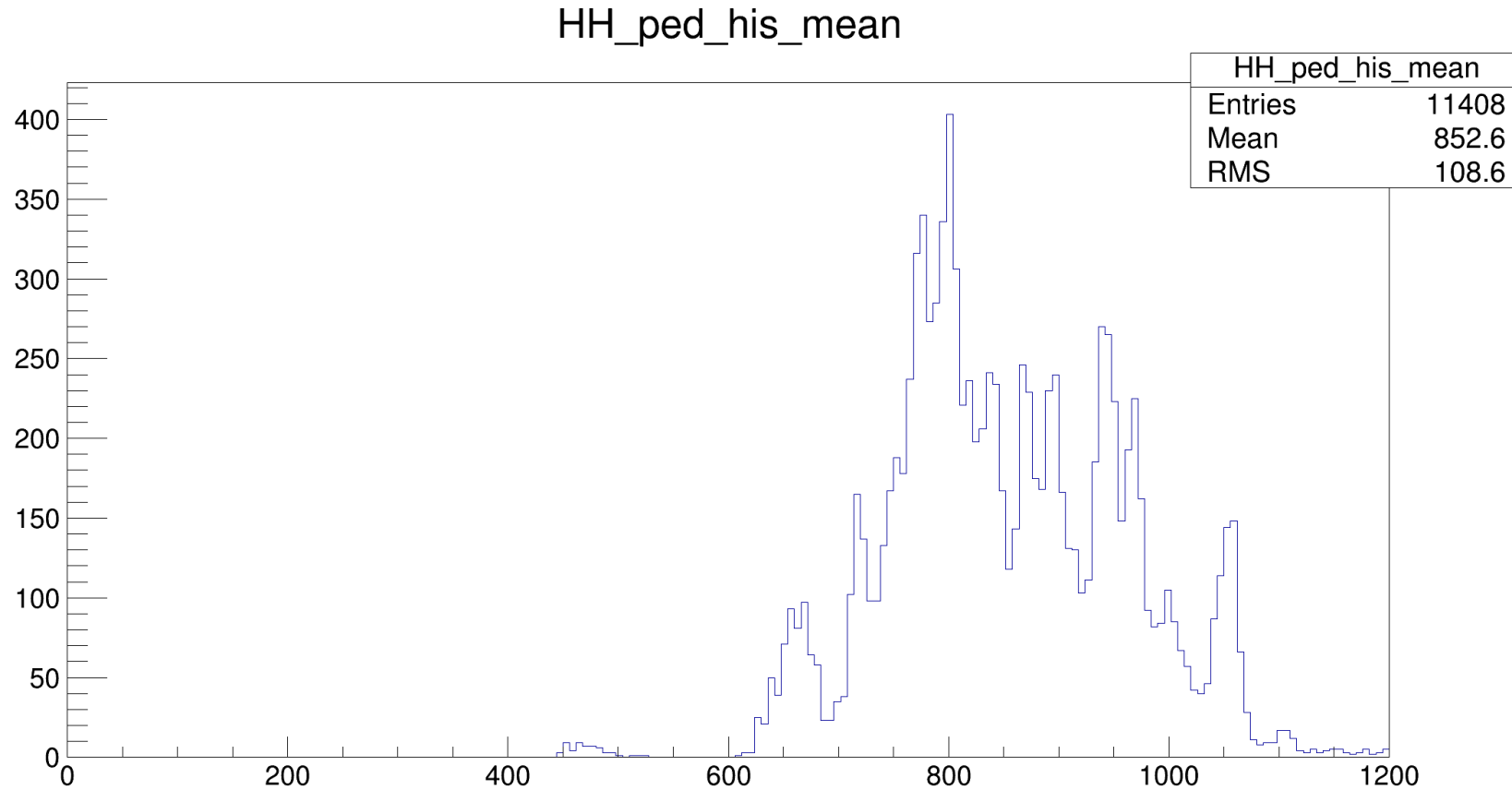
Muon pedestal (one APD)



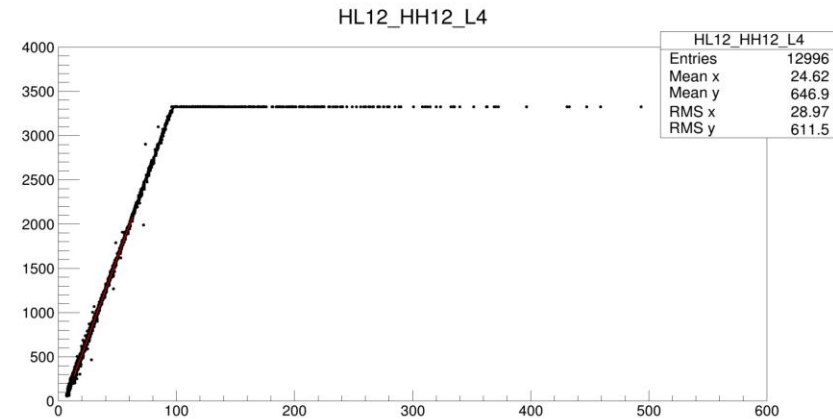
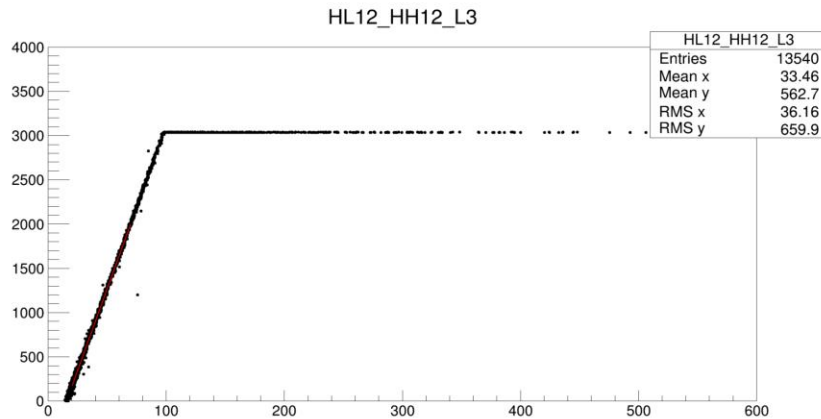
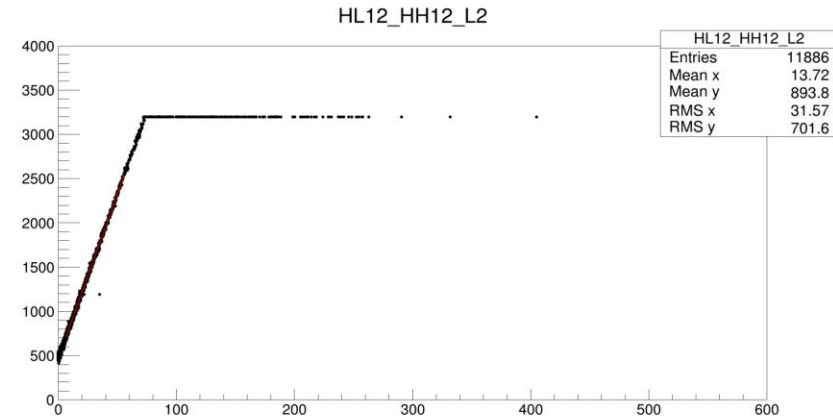
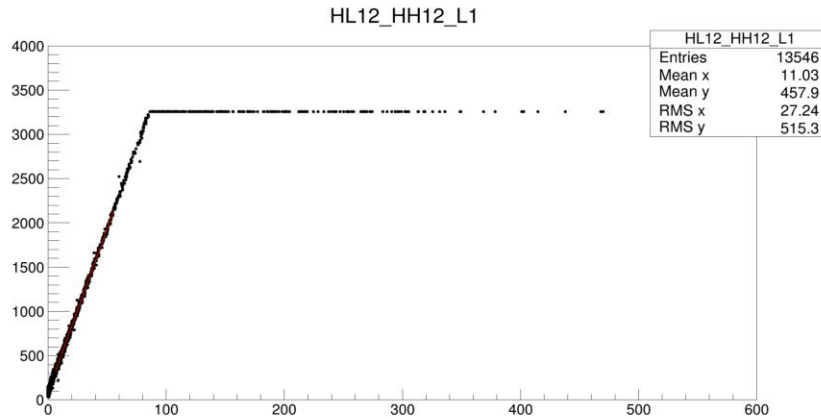
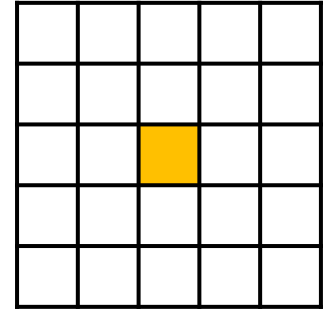
Muon pedestal (one channel)

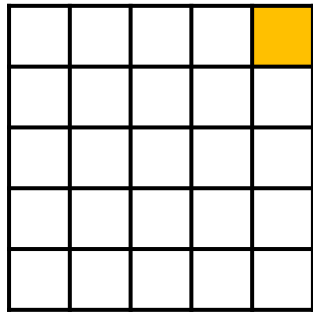


Muon pedestal (HH channels)

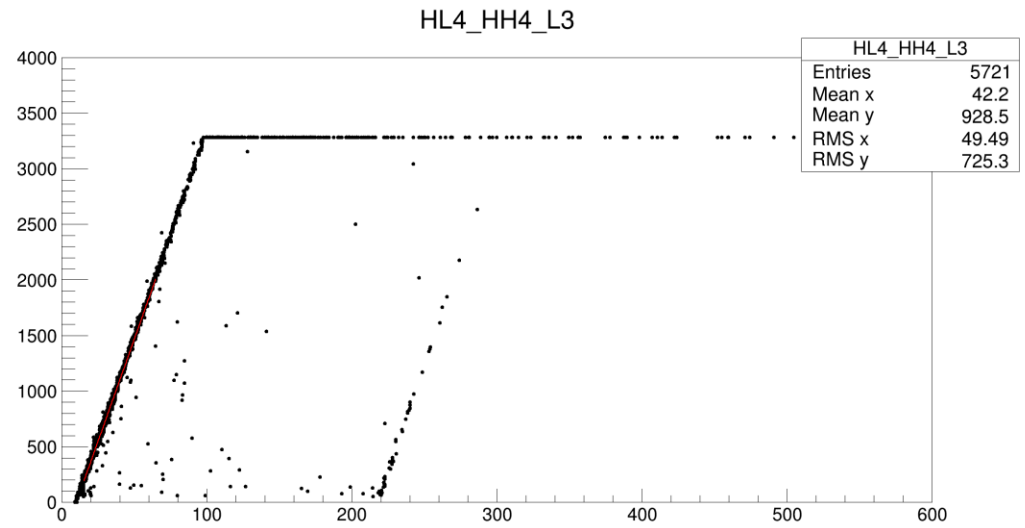
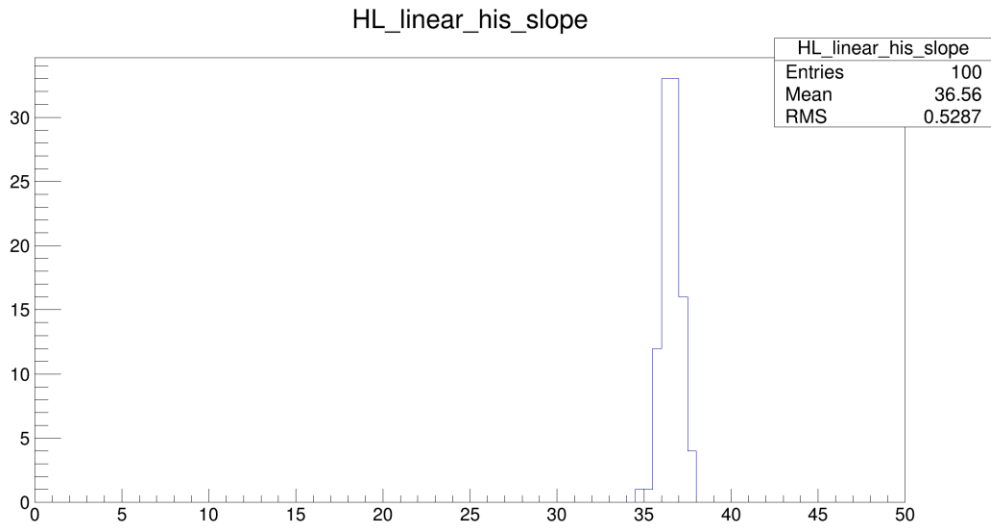


Muon channels' linearity

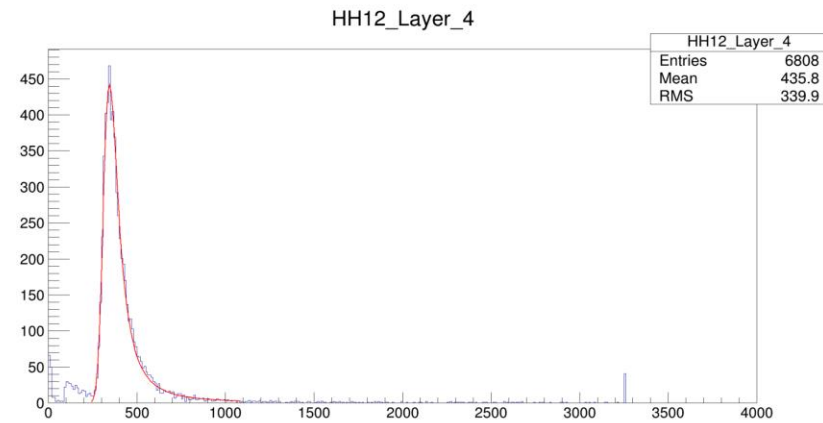
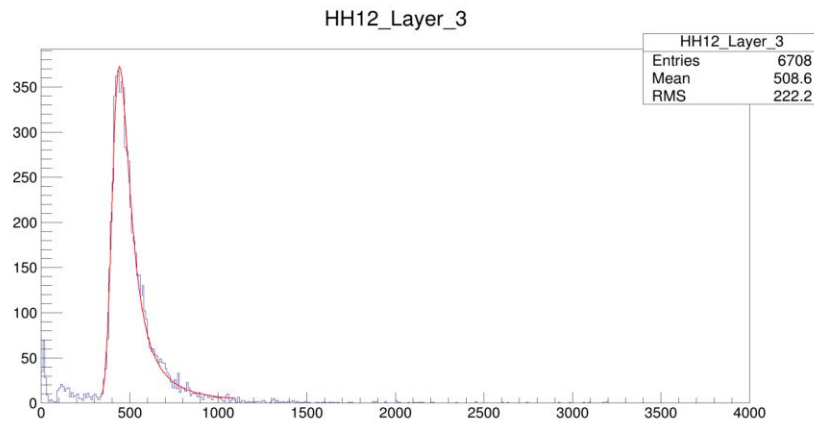
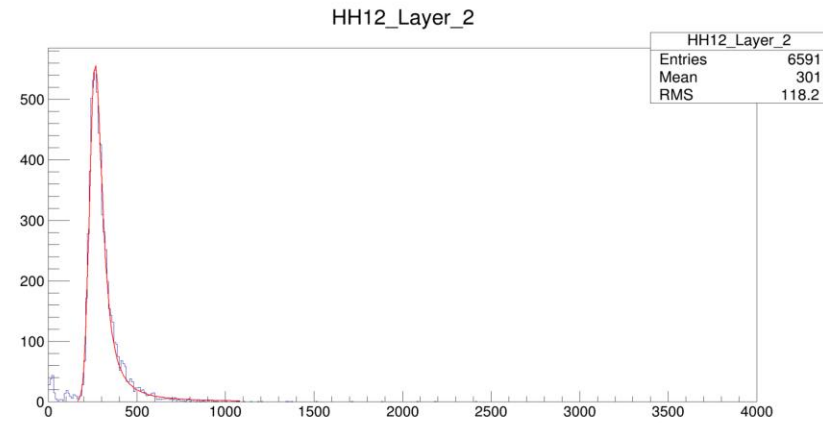
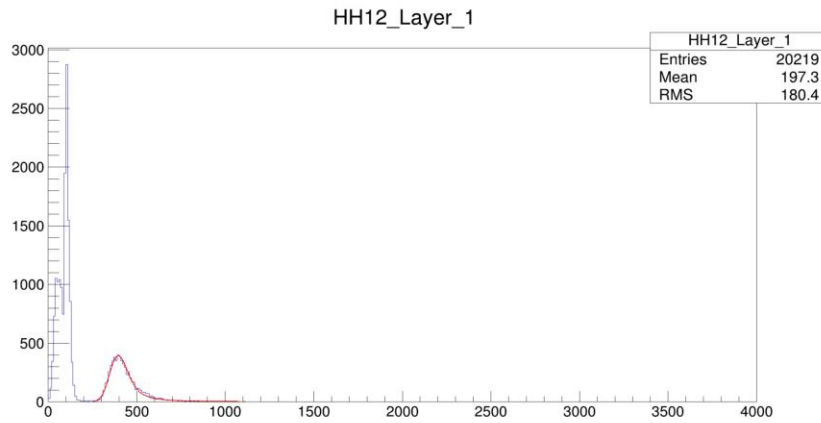
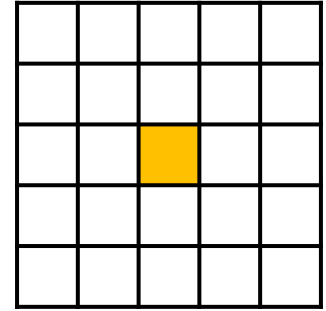




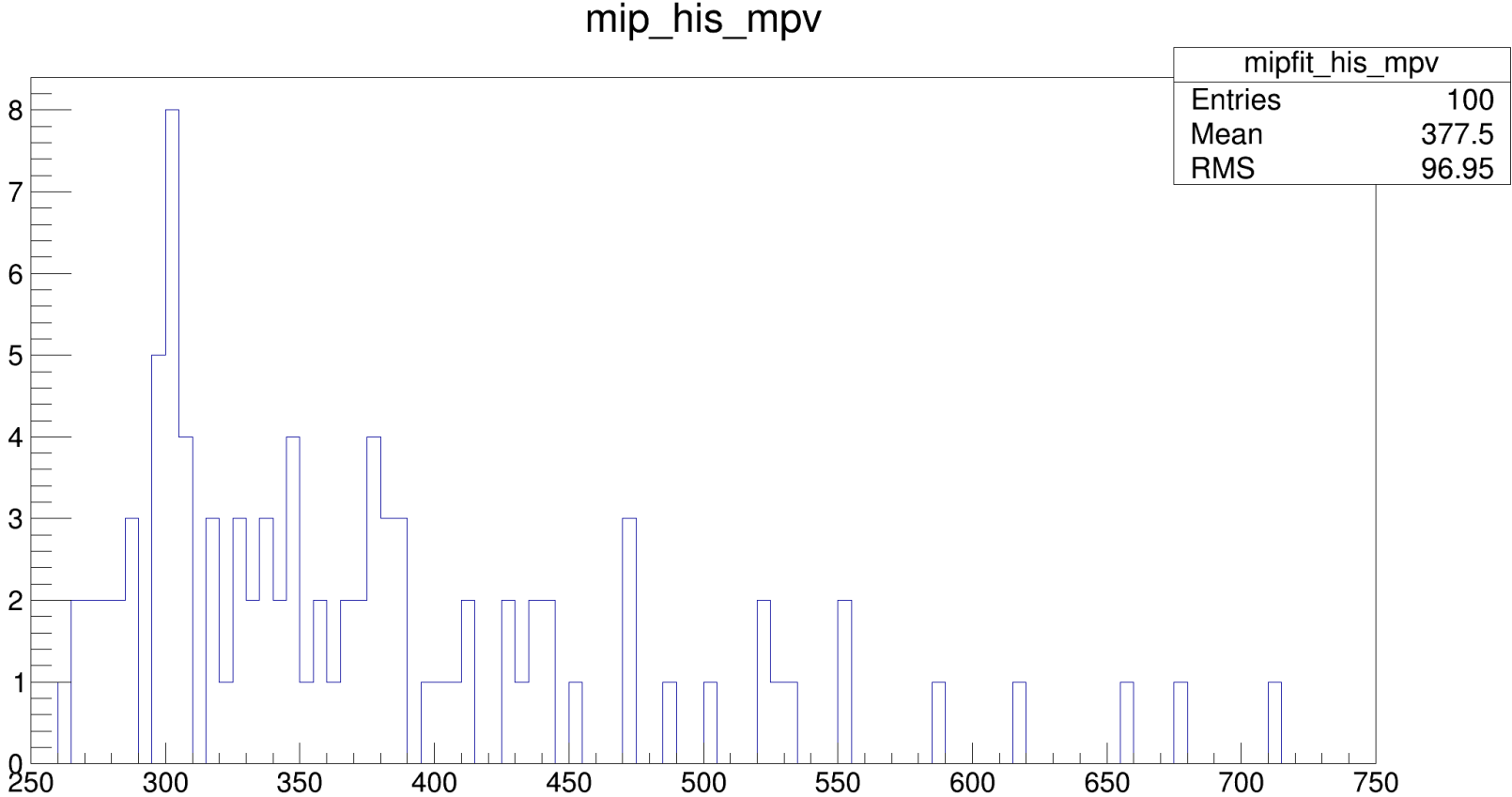
Muon channels' linearity

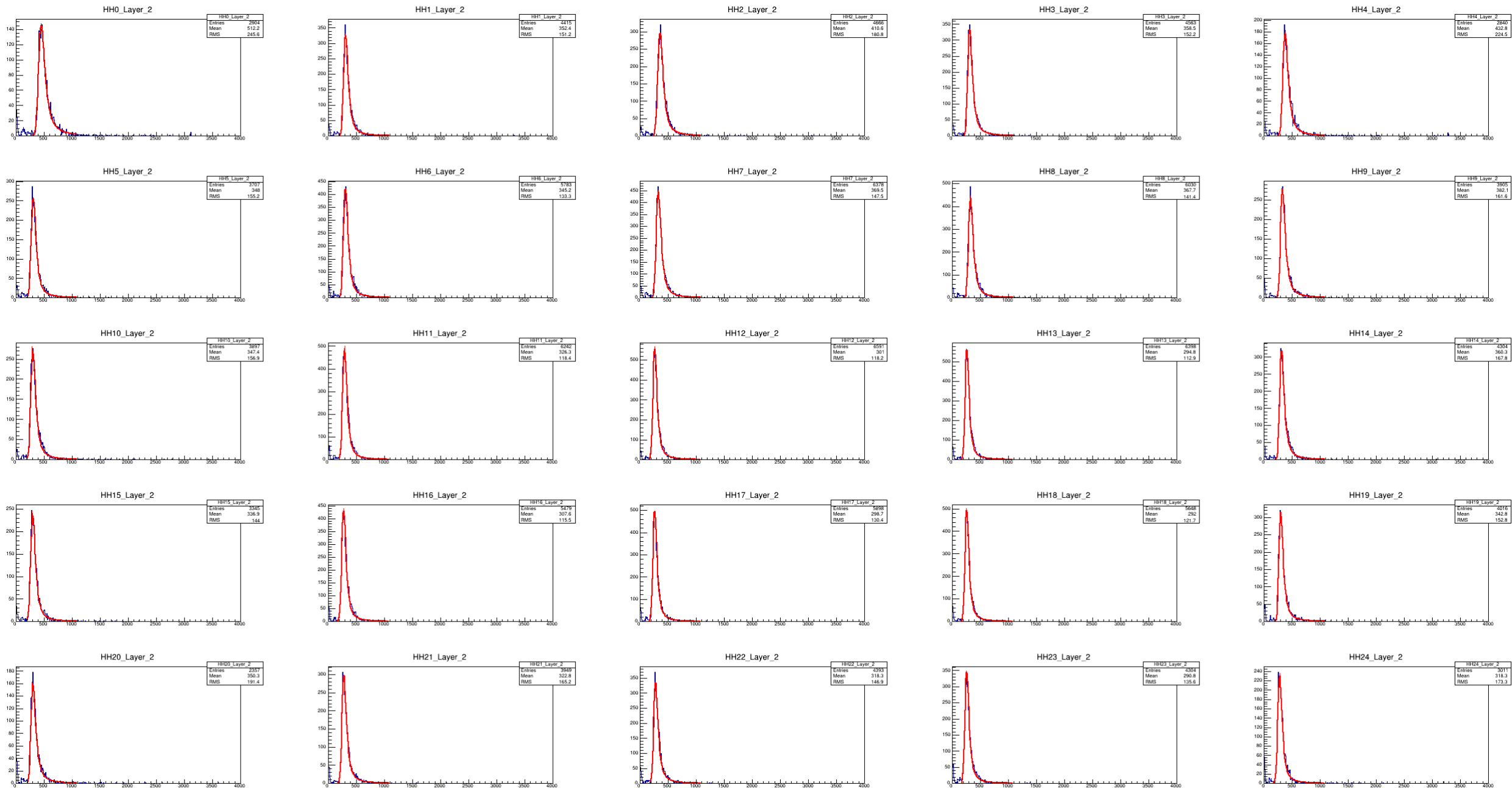


Muon MIPs (one channel)



Muon HH MIPs

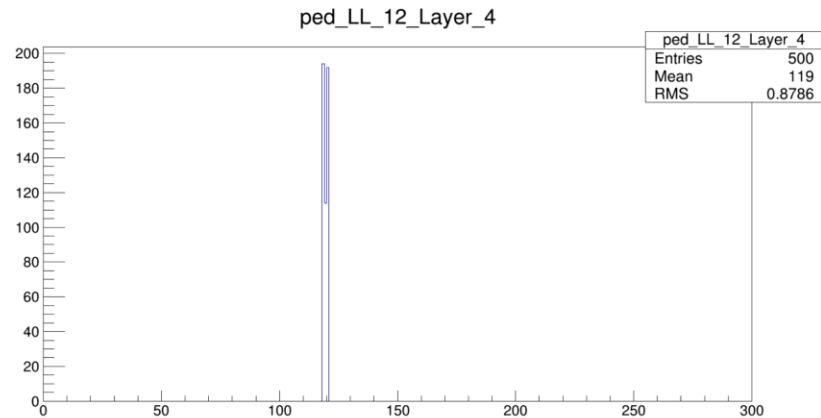
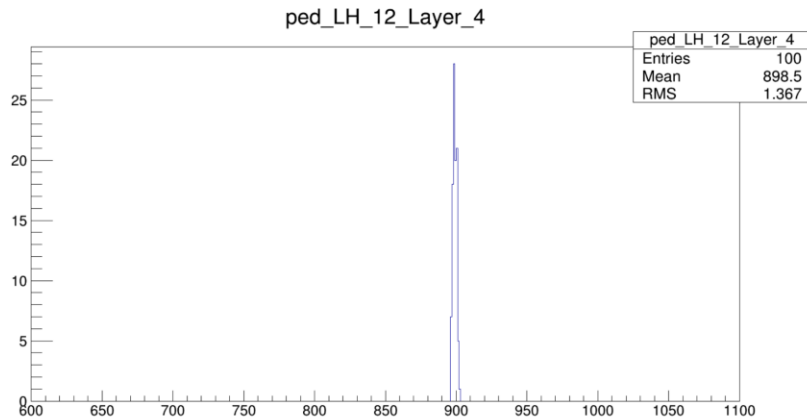
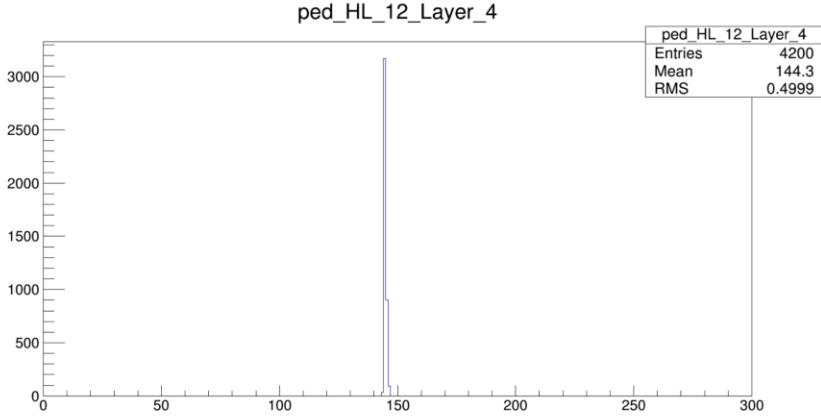
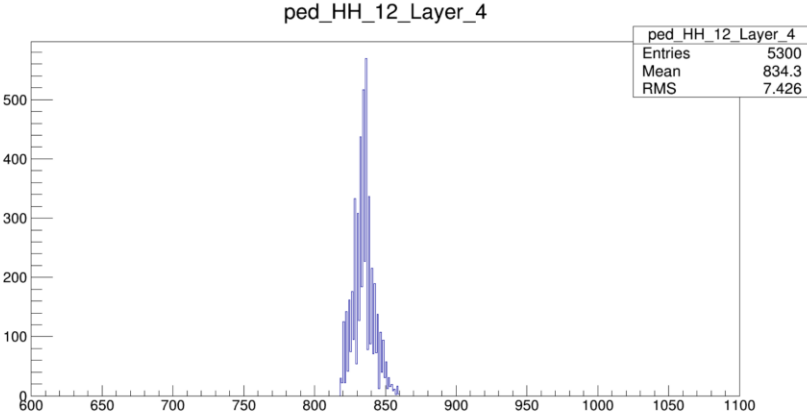
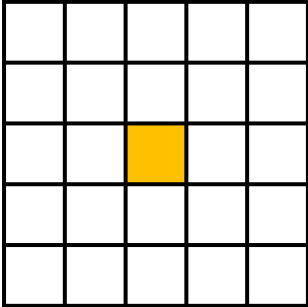




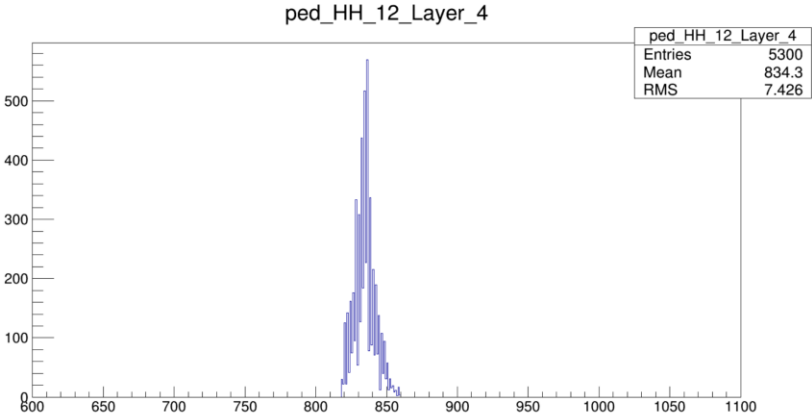
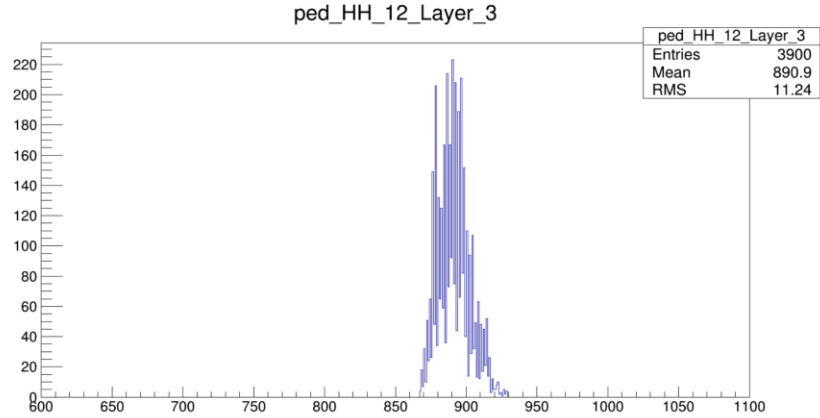
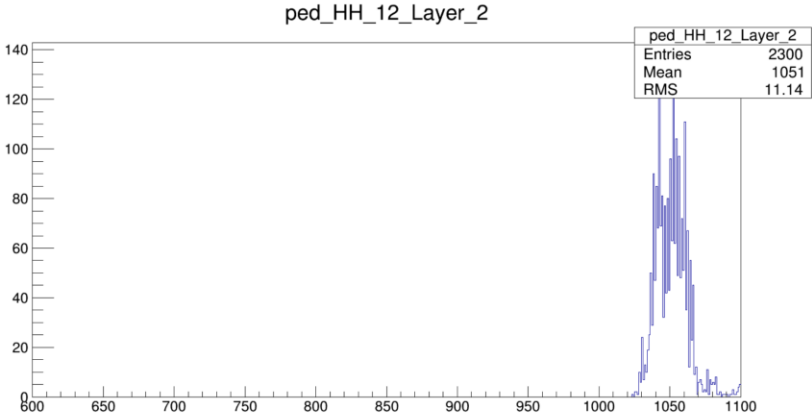
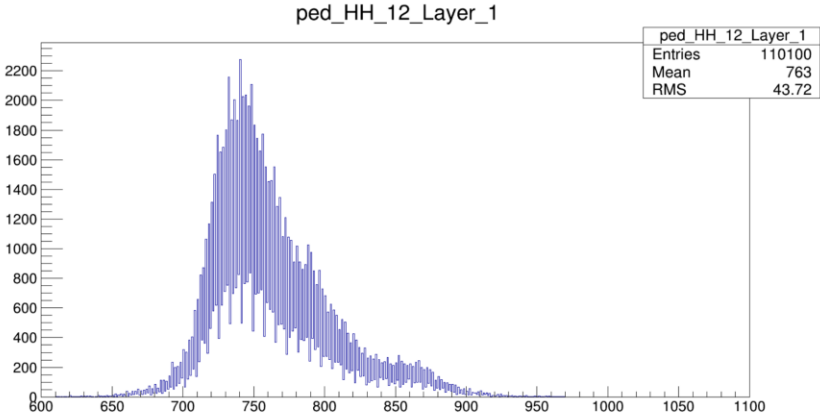
Pion data summary

- 汇总了 25 个等间距位置扫描的数据文件，粒子入射位置分别位于 25 个小晶体的中心，RunID 从 10045 到 10069，总共获得 232844 个有效事例。

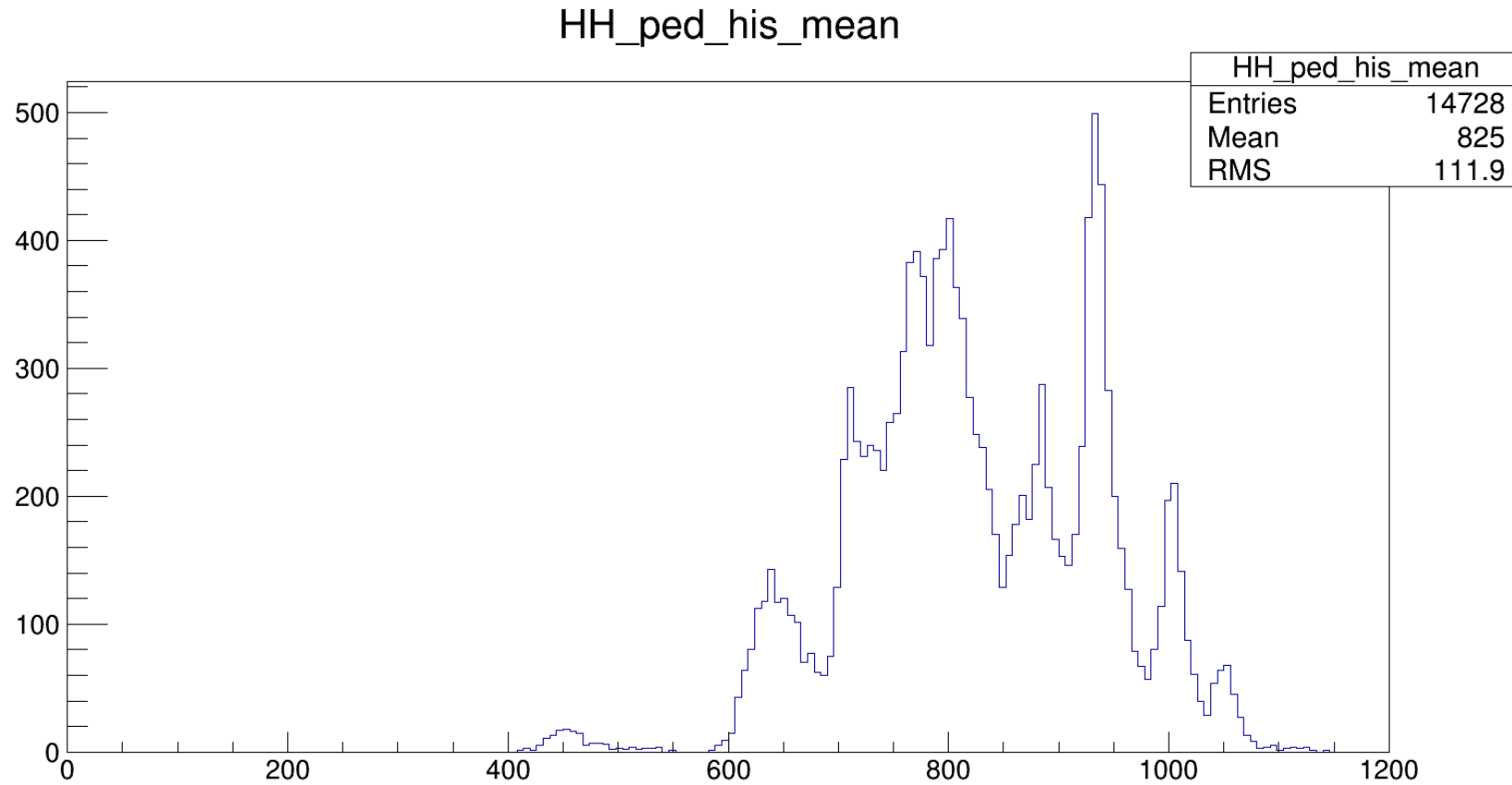
Pion pedestal (one APD)



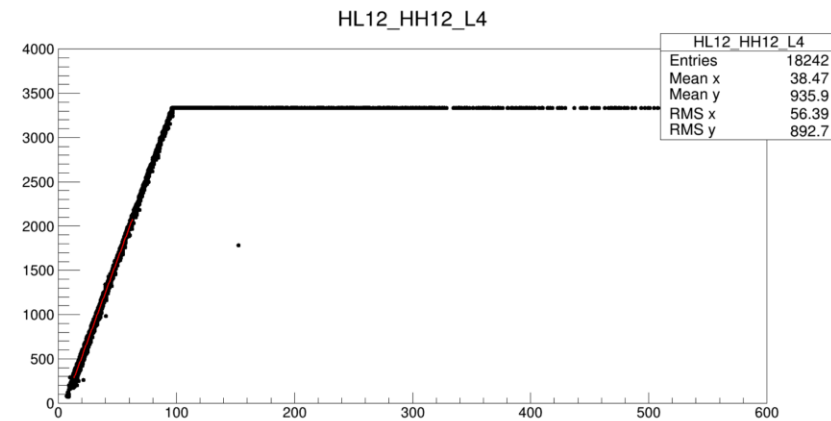
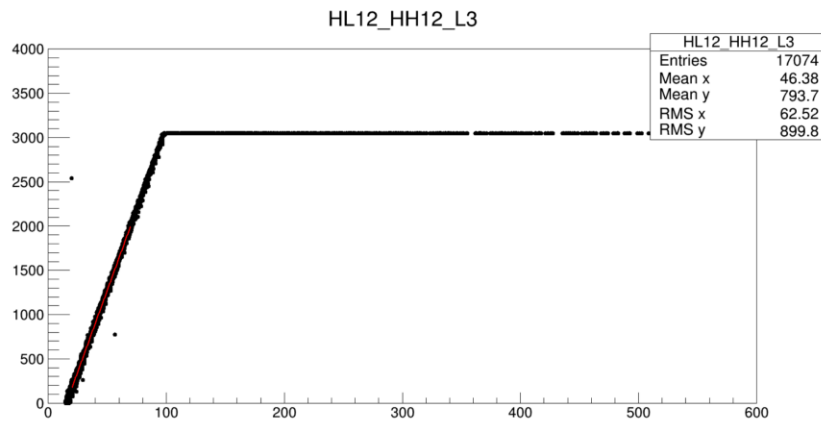
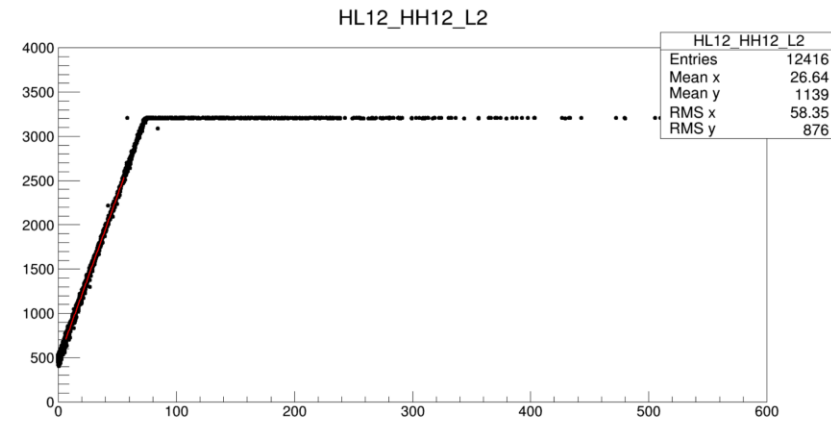
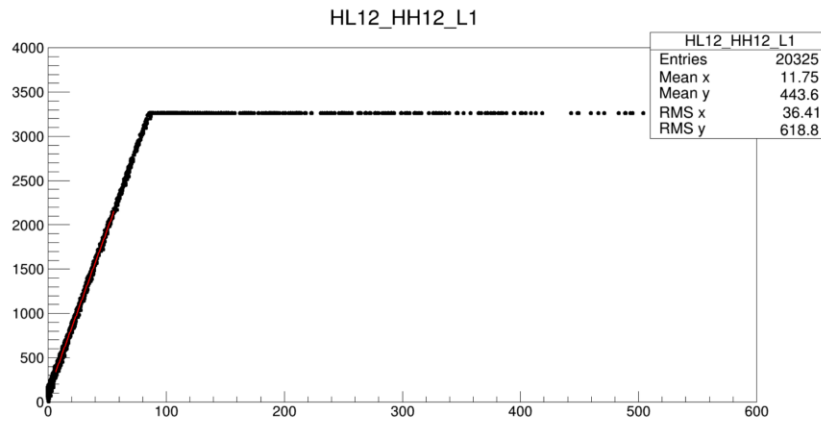
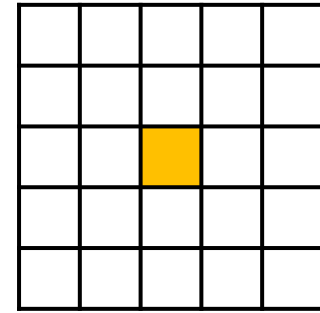
Pion pedestal (one channel)



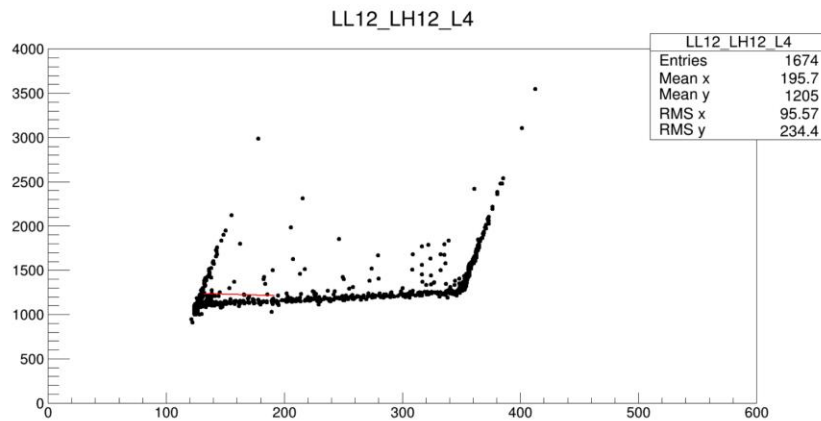
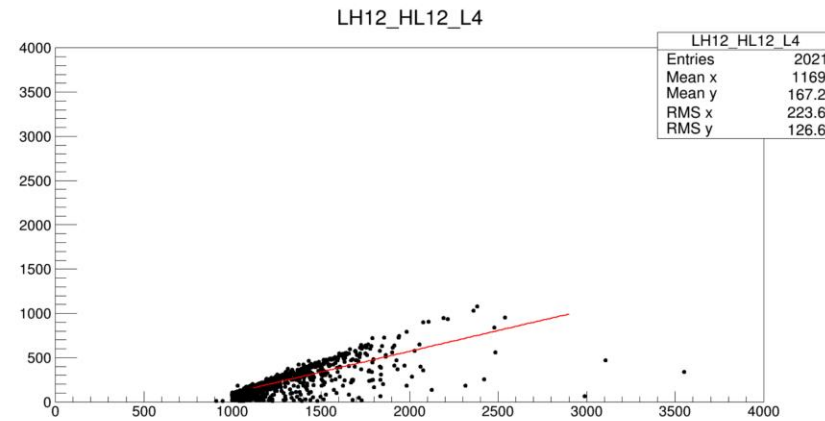
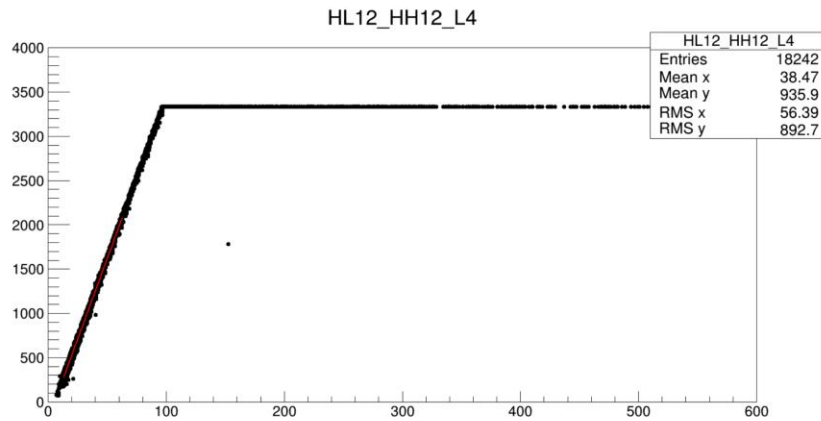
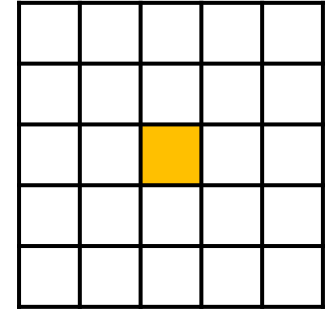
Pion pedestal (HH channels)



Pion channels' linearity



Pion channels' linearity



Pion channels' linearity

