HEIC-Cube 束流数据处理

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HEIC-Cube structure



Readout scheme of HEIC-Cube



Different APDs use filters to realize high-low gain. (H^* / L^*)

One APD realizes high-low gain by electronics. (*H / *L)



Waveform sampling

Particle	Momentum (GeV/c)	Total counts
e ⁻	1, 2, 3, 4, 5	1,012,152
μ^-	5	327,294
π^-	10, 12	409,269



Data analysis content

- Pion:
 - Pedestal;
 - HG-LG ratio;
- Muon:
 - MIPs;

Pion data summary

- 粒子动量为 12 GeV/c;
- 汇总了 25 个等间距位置扫描的数据文件, RunID 从 10045 到 10069;
- •入射位置分别对准25个小晶体的中心;
- 总共获得 232844 个有效事例。

Pion pedestal



Pion HG-LG ratio



Muon data summary

- 粒子动量为 5 GeV/c,
- 汇总了 25 个等间距位置扫描的数据文件, RunID 从 10004 到 10032;
- •入射位置分别对准25个小晶体的中心,
- 总共获得 192686 个有效事例。

Muon MIPs

Screening condition:

- Igniting layers >= 3;
- <=2 channels in one layer;



Pion HG-LG ratio



ped_HH12_Layer 4 ped_HL12_Layer 4 HH_ped_his_mean ped_HH12_Layer 4 Entries 1413900 Mean 841.9 RMS 21.66 ped_HL12_Layer 4 Entries 1299600 Mean 145.7 RMS 2.277 HH_ped_his_mean G30000 00081uts Entries Mean 119.3 RMS 150 155 ADC value ADC value ped_LH12_Layer 4 ped_LL12_Layer 4 ped_LH12_Layer 4 Entries 62900 Mean 901.8 RMS 10.06 ped_LL12_Layer 4 Entries 57200 Mean 119.6 RMS 1.084 §22000 ADC value 0 105 ADC value ADC value

Muon pedestal

Muon HG-LG ratio



Muon HG-LG ratio

