

Status of identification

- Number of hits Si/GEM/CSC in Data and Embedding
- Cluster Signal Correlation. All hits. Si
- Cluster Signal Correlation. All hits. GEM
- Cluster Signal Correlation. All hits. CSC



Number of hits Si/GEM/CSC in Data and Embedding



- About 25% of events have at least 1 station, where *nHits_{Emb}<<i>nHits_{Data}*
- $nHits_{Emb} < nHits_{Data}$ in less than 2.5% cases
- Is it acceptable?



Cluster Signal Correlation. All hits

- Sergei used hits from tracks from PV to make his cuts
- I am using all hits from run 4649
- My cuts softer than Sergei's cuts



Vasilii Plotnikov, 12.10.2020

Cluster Signal Correlation. VP hits VP edges All hits. Si



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- Central spot from Ar beam
- Top horizontal cut added to remove clusters from the beam
- All cuts close to each other for Si1-Si3

Cluster Signal Correlation. All hits. GEM1-GEM3



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10000

for hits, station 4

its

8000

8000

8000

for hits, station 6

10000

10000

6000

vs Q_{BackCluster} for hits, station 5

6000

6000

StsCluster[StsHit.fDigiB].fQtot

StsCluster[StsHit.fDigiB].fQtot

StsCluster[StsHit.fDigiB].fQtot

rontCluster VS Q BackCluste

4000

4000

vs Q

4000

StsCluster[StsHit.fDigiF].fQtot

StsCluster[StsHit.fDigiF].fQtot

StsCluster[StsHit.fDigiF].fQtot

10000

8000

6000

4000

2000

10000

8000

6000

4000

2000

10000

8000

6000

4000

2000

°0

°0

2000

Q

2000

Q FrontCluste

2000

Cluster Signal Correlation. All hits. GEM4-GEM6

StsCluster[StsHit.fDigiF].fQtot

StsCluster[StsHit.fDigiF].fQto

StsCluster[StsHit.fDigiF].fQtot

°0

°0

Q_FrontClust



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for hits, station 7

for hits, station 9

for hits, station 8

StsCluster[StsHit.fDigiB].fQtot

StsCluster[StsHit.fDigiB].fQtot

StsCluster[StsHit.fDigiB].fQtot

vs Q.

vs Q



- Correlation for CSC looks better than for GEM and Si
- Cuts for CSC softer than for GEM and Si





Backup

BM@N Results of identification comparison for Data and MC with efficiencies



- Left m^2 distribution is normalized to the π^+ peak
- Other distributions are normalized to the integral
- S/B for Data significantly lower than for MC
- m² distributions for Data and MC close to each other in (π⁺, K⁺) region

• Pt spectra of π^+ and K⁺ for Data and MC close to each other

BM@N Results of identification comparison for Data and MC with efficiencies



- All spectra are normalized to the integral
- P and Y spectra of K⁺ for Data and MC close to each other
- P and Y spectra of π⁺ for
 Data and MC significantly different