K⁺/ π ⁺(pq) argon, MC

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• Min 5 GEM + TOF400 hit + from Primary Vertex

K⁺/ π^+ (pq) Exp vs MC



- K+/ π + for MC 1.2-2.5 times larger
- Difference are decreased with pq

K^+ , π^+ pq spectra, Exp vs MC



- Left trigger1, middle trigger2, right MC
- K⁺ spectra are more different

MC correction K+, 4PI MC, K+ hpq_kp hMomK 450 ուտորդներ Integral 609 400 Integral 25107 40 . 350 300 30 250 200 20 150 vر 100 10 ിഗ്ര 50 ᅇᆣ 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6 1.8 2 0.2 0.4 0.6 0.8 1.2 1.4 1.6 1.8 2 1 p/q, GeV/ac c1 425,327 x=1.45504, y=-78.282 **c**1 Edit View Options Tools Help 800 pi+, 4PI 18000 MC, pi+ hpq_pip hMomPi 16000 700 Integral 528011 Integral 13306 14000 600 12000 500 10000 400 8000 300 6000 200 4000 100 2000 0[₫] 1 1.2 1.4 1.6 1.8 0^E 0.4 0.6 0.8 0.2 0.4 0.6 0.8 1 1.2 1.4 0.2 2 1.6 1.8 p/q, GeV/qc

- 2 corrections: acceptance and K⁺ decay
- Low edge from Exp 0.5 GeV/qc
- Full K+ and $\pi\text{+}$ spectra are dropped monotonically after 0.5 GeV/qc

MC correction

Pq bin, GeV/cq	0.5 <pq<1.2< th=""><th>1.2<pq<1.5< th=""><th>1.5<pq<1.8< th=""><th>1.8<pq<2.0< th=""></pq<2.0<></th></pq<1.8<></th></pq<1.5<></th></pq<1.2<>	1.2 <pq<1.5< th=""><th>1.5<pq<1.8< th=""><th>1.8<pq<2.0< th=""></pq<2.0<></th></pq<1.8<></th></pq<1.5<>	1.5 <pq<1.8< th=""><th>1.8<pq<2.0< th=""></pq<2.0<></th></pq<1.8<>	1.8 <pq<2.0< th=""></pq<2.0<>
Coef	0.4287	0.4506	0.5098	0.6127

- Coef=K+/π+(TOF400)/K+/π+(4π)
- To correct K+/π+/Coef
- Difference lower with pq due to less K+ decays

Efficiency of triggers in pq bins

- Triggers could select π ⁺ and K⁺ differently (π ⁺ can appear in events with low multiplicity)
- Eff(Trig)=K+/pi+(Trig)/K+/pi+(Empty)
- Two basic sets of runs: Si>2+Si>3, Bd>2+Bd>3
- To get unshifted ratio

K+/pi+=K+/pi+(Trig)/Eff(Trig)

Efficiency of triggers in pq bins

Trigger Pq bin, GeV/cq	BD>1 (Si>2+Si>3)	Si>2 (Bd>2+Bd>3)	BD>1 && Si>2 (Eff(BD>1)*Eff(Si>2))	BD>3 (Si>2+Si>3)
0.5 <pq<1.2< td=""><td>0.9937</td><td>1.2101</td><td>1.2025</td><td>0.9615</td></pq<1.2<>	0.9937	1.2101	1.2025	0.9615
1.2 <pq<1.5< td=""><td>0.9798</td><td>1.1160</td><td>1.0935</td><td>1.0454</td></pq<1.5<>	0.9798	1.1160	1.0935	1.0454
1.5 <pq<1.8< td=""><td>1.0510</td><td>1.1573</td><td>1.2164</td><td>1.1294</td></pq<1.8<>	1.0510	1.1573	1.2164	1.1294
1.8 <pq<2.0< td=""><td>1.0105</td><td>1.0455</td><td>1.0565</td><td>1.1084</td></pq<2.0<>	1.0105	1.0455	1.0565	1.1084

- For full pq interval and BD>1 && Si>2 Eff~1.13
- For BD>3 Eff~1.04

K⁺/ π^+ (pq) with corrections vs MC



• K+/ π +(pq) for Exp and MC become close

K⁺/ π^+ (A) with MC correction



- Coef=0.5568
- Same correction for all targets
- Is it necessary to multiply errors to Coef also?

Pt spectra for K⁺ and π^+ , Exp vs MC



- For MC identifiable tracks are shown
- Common pt interval 0-0.5 GeV/c
- Less particles with low pt in Exp

TODO: K⁺/π⁺(pt)

- Could we use following pt intervals: 0-0.1-0.15-0.2-0.5?
- How to go from pq to y?
- Simple approach is to build y spectrum and repeat all analysis steps for it

Thank you!