Embedding QA

embedding + real

Color code for embedding and real data

MC (black)

Reconstructed embedding tracks* (red)

Real** (blue)

* matched pairs or contaminated pairs

** black is also used, see legend for each pad

Event & track selections

*** Event selections

z-vertex cut : $|v_z| < 40.0$ cm

trigger id cut : id = 350003, 350013, 350023, 350033, 350043

NOTE: Trigger id cut for real data has to be made manually in doEmbeddingQAMaker.C

*** Track selections

$0.1 < p_T < 2.5$ GeV/c

$|\eta| < 1.50$

$|y| < 1.00$

nHitsFit > 10

nHitsFit/nHitsPoss > 0.51

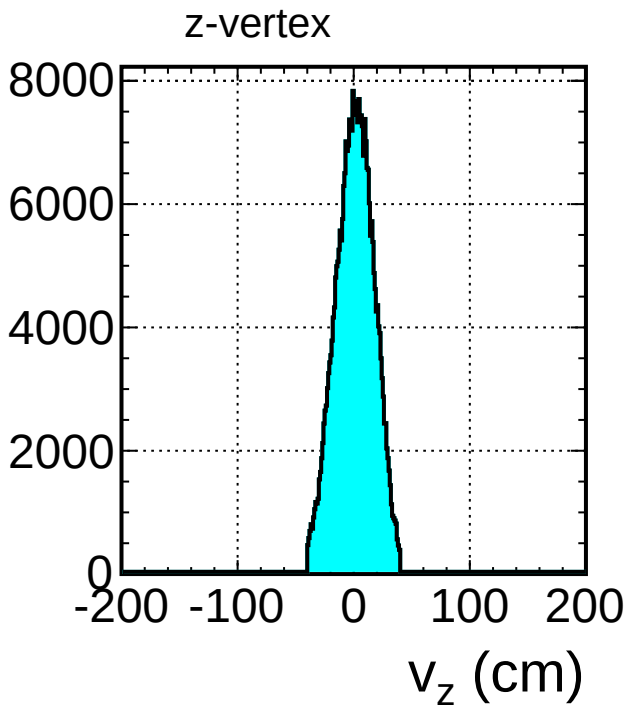
global Dca < 3.0 cm

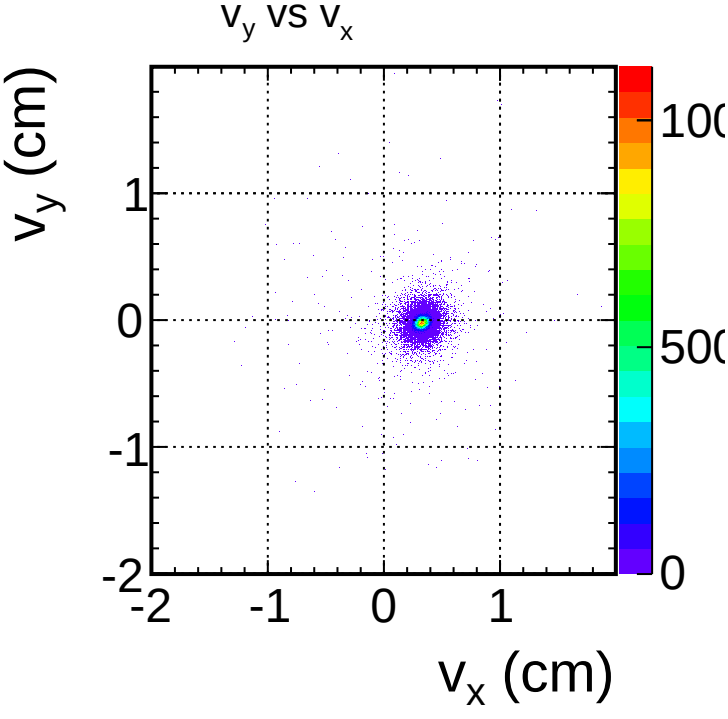
$|n\sigma| < 2.0$

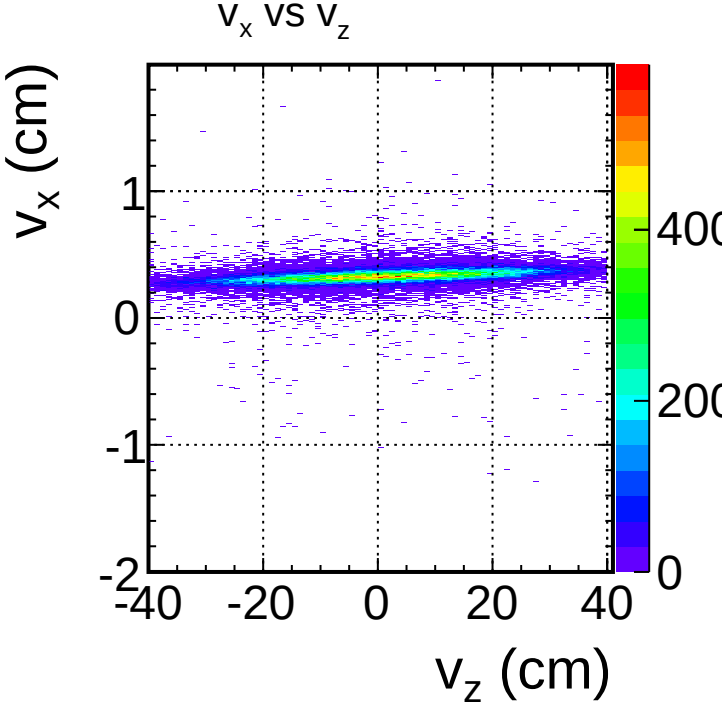
NOTE1: Rapidity cut for real data has to be made manually in doEmbeddingQAMaker.C

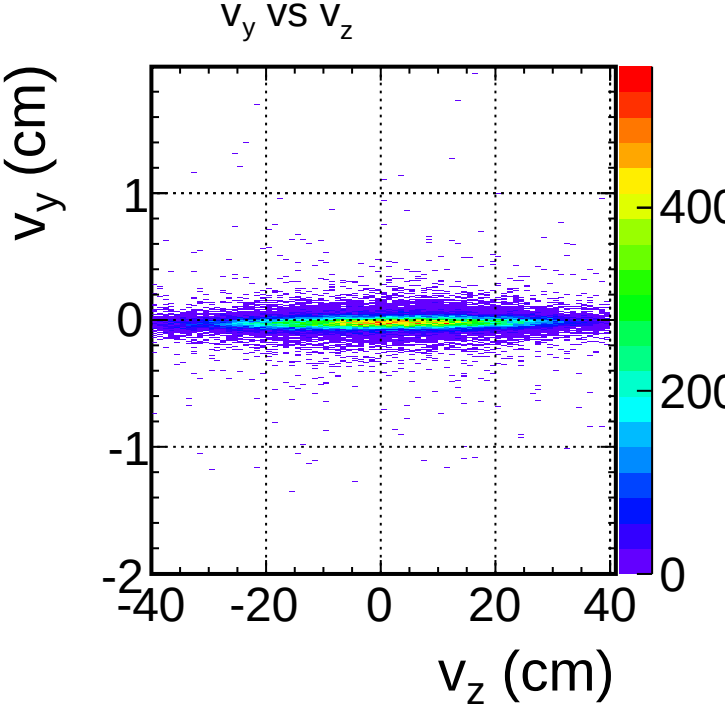
NOTE2: Cut on its own variable is currently disabled, e.x. no dca cut for dca histogram

Event vertices, offline cuts: -40.0 < v_z < 40.0 cm

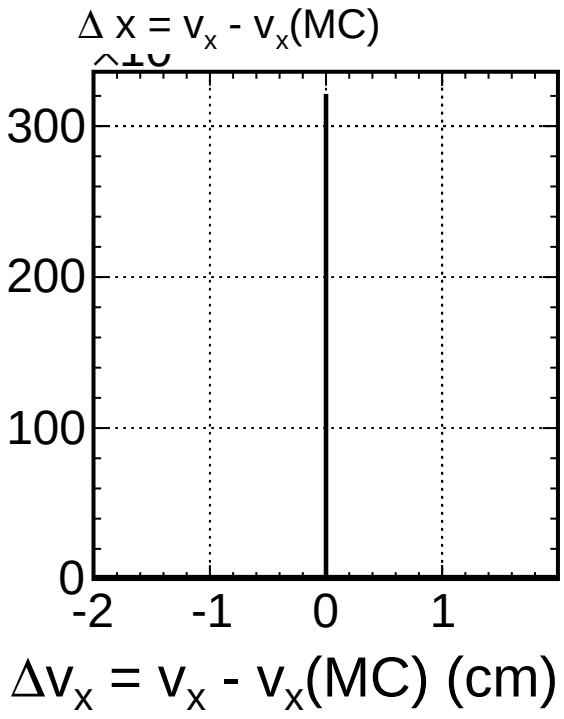


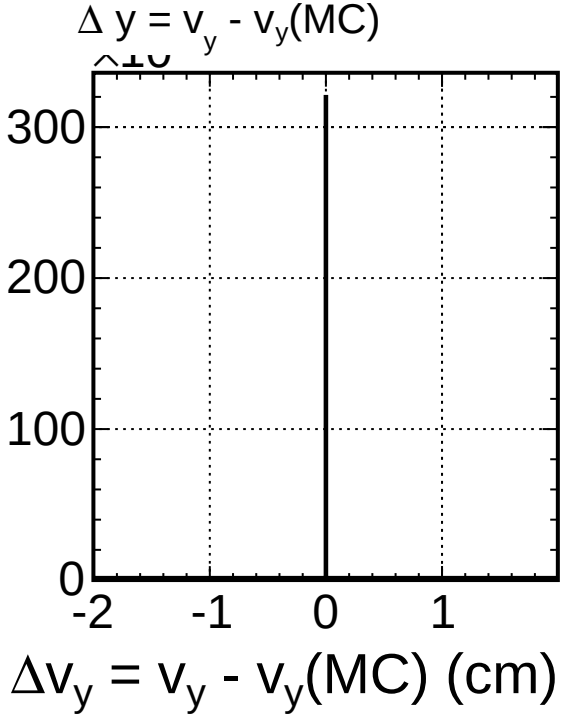


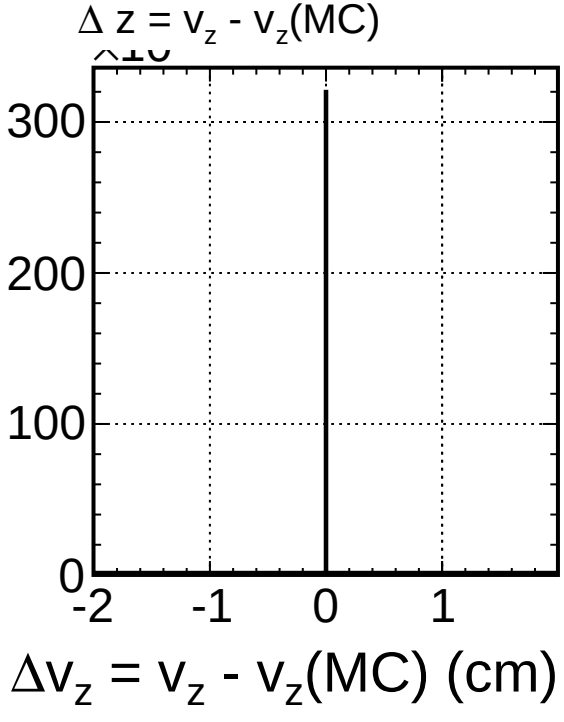




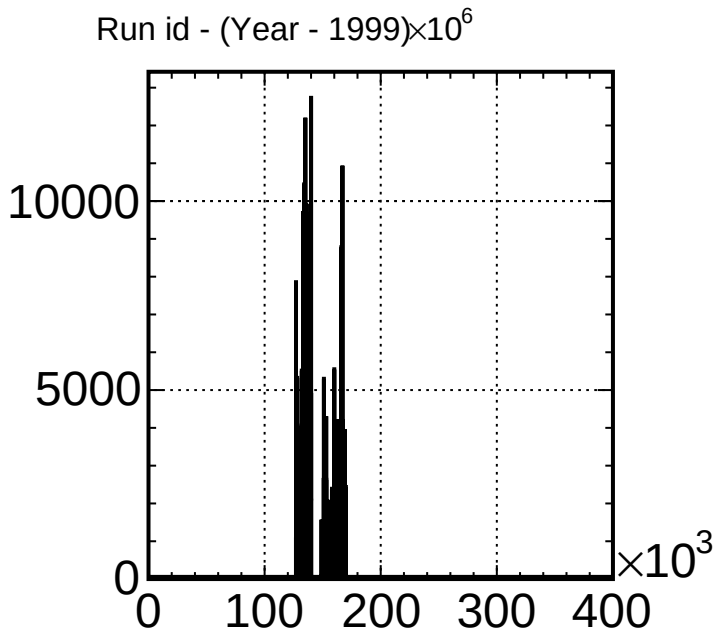
Event vertices, Δv = v(Data) - v(MC)

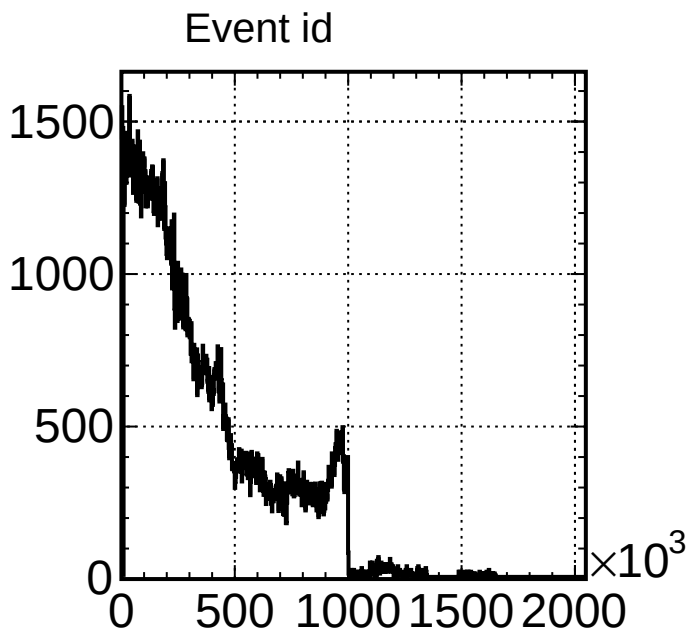






Run and event id



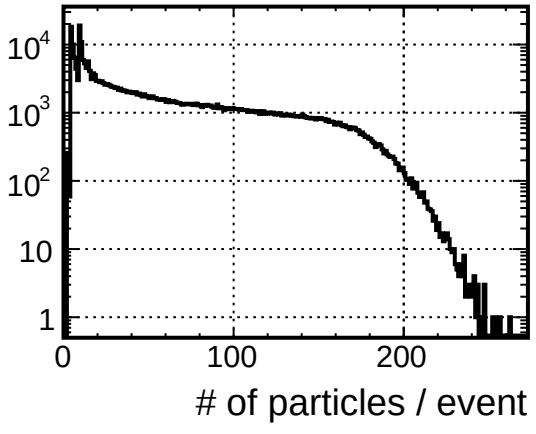


Run id	statistics
12127014	1104 events
12127035	7896 events
12127048	2210 events
12128008	3252 events
12128019	5322 events
12128030	4062 events
12132020	5514 events
12132026	3738 events
12133002	3522 events
12133012	4740 events
12133061	9726 events
12134002	10440 events
12134034	9300 events
12134036	4776 events
12134057	8664 events
12134061	3855 events
12134062	3870 events
12135008	7818 events
12135021	8610 events
12135045	4950 events
12135052	12206 events
12135057	5619 events
12136001	9708 events
12136026	1728 events
12136047	4638 events
12136065	9930 events
12136076	4050 events
12137012	9498 events
12137027	1386 events
12138009	4092 events
12138023	4038 events
12139029	1128 events
12139080	2934 events
12140006	12782 events
12140027	4926 events
12140028	2075 events
12149051	1572 events

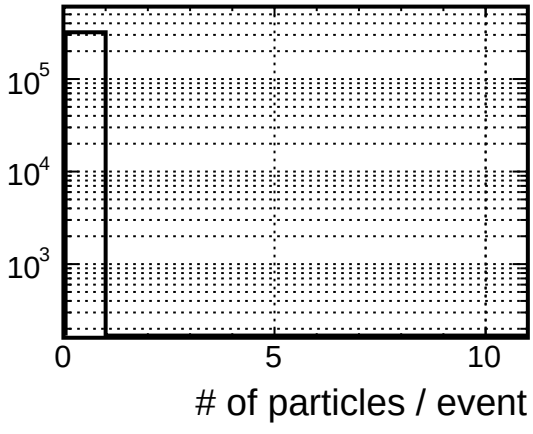
Run id	statistics
12150026	1350 events
12151013	2676 events
12151066	5298 events
12153016	2628 events
12153034	4308 events
12155001	2046 events
12155023	468 events
12155044	1386 events
12155049	1572 events
12155058	1542 events
12157010	1014 events
12158004	2376 events
12158019	1968 events
12158053	780 events
12158058	2388 events
12159005	1842 events
12159013	1368 events
12160007	3896 events
12160019	5550 events
12160020	2430 events
12160022	588 events
12160023	2555 events
12161029	4002 events
12161033	4194 events
12162009	3522 events
12162032	4230 events
12163020	3882 events
12164040	924 events
12166058	4076 events
12166062	8778 events
12167009	10938 events
12167047	4164 events
12169026	2166 events
12169027	3250 events
12169048	3966 events
12169056	3750 events
12170001	2436 events

Multiplicity distribution

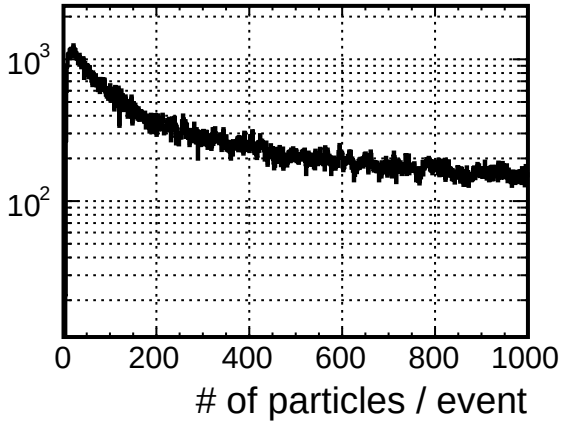
MC tracks



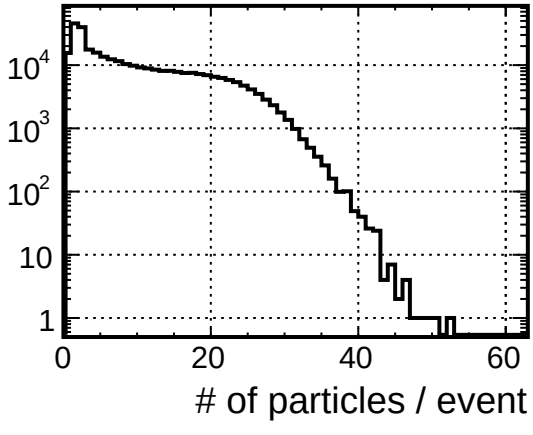
Matched pairs



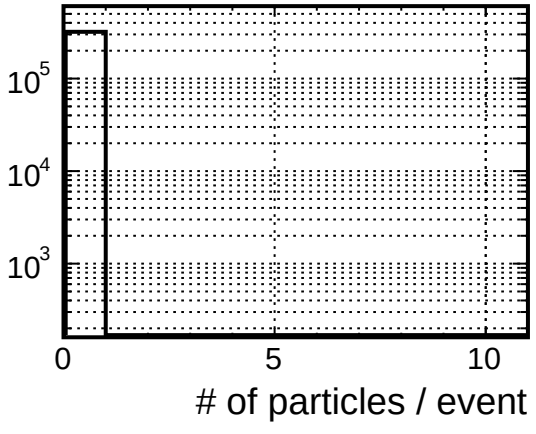
Ghost pairs



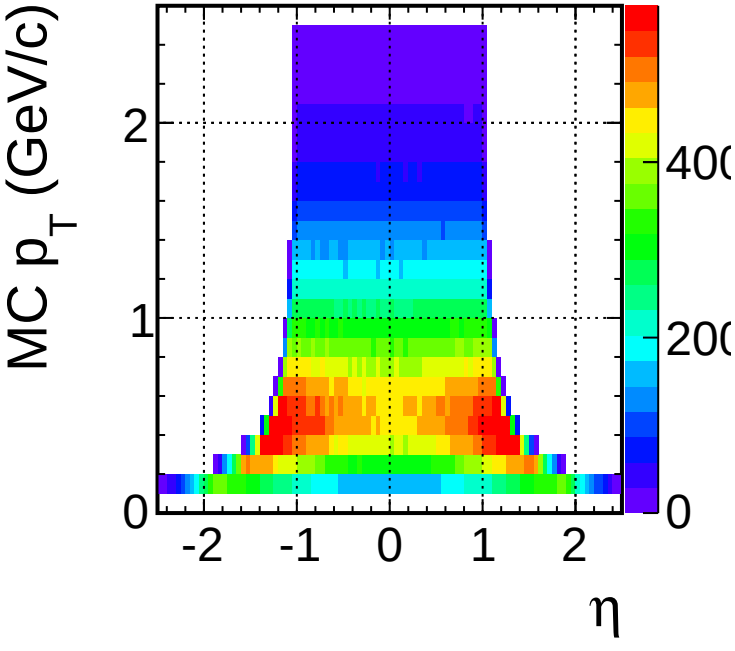
Contaminated pairs

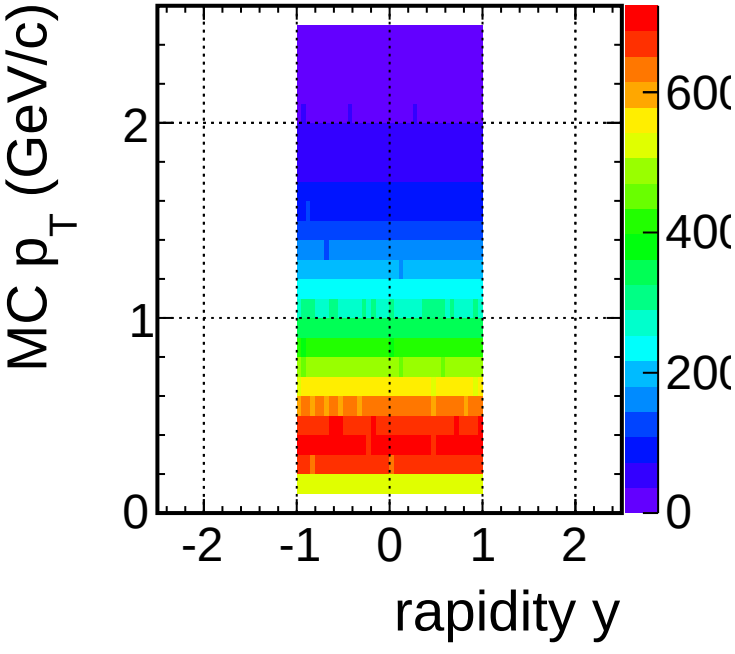


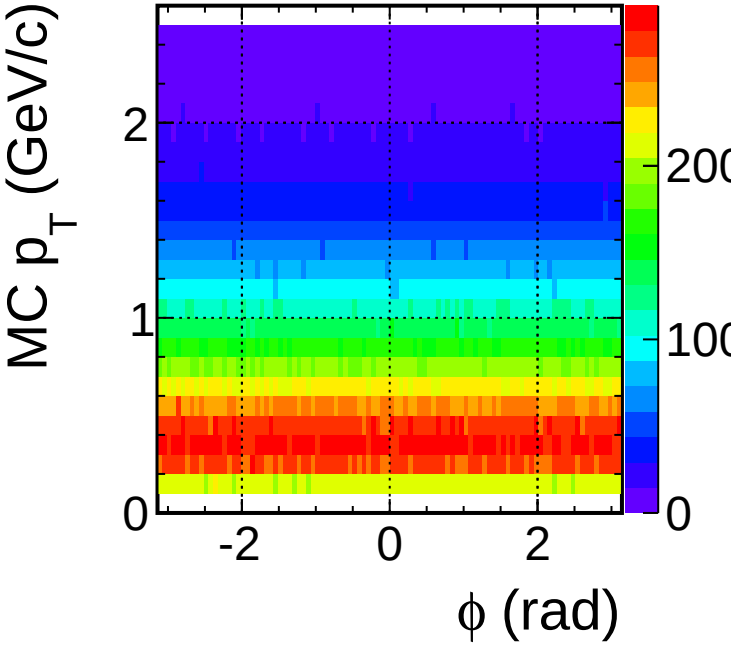
Matched global pairs



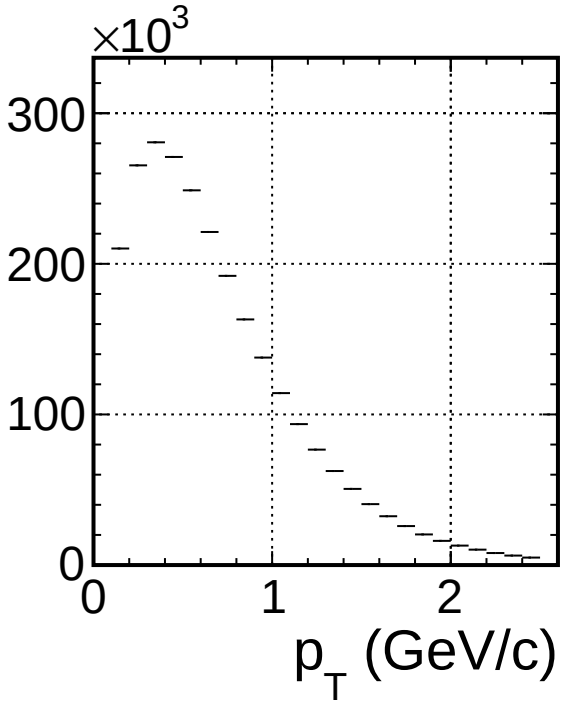
MC track QA (2D)

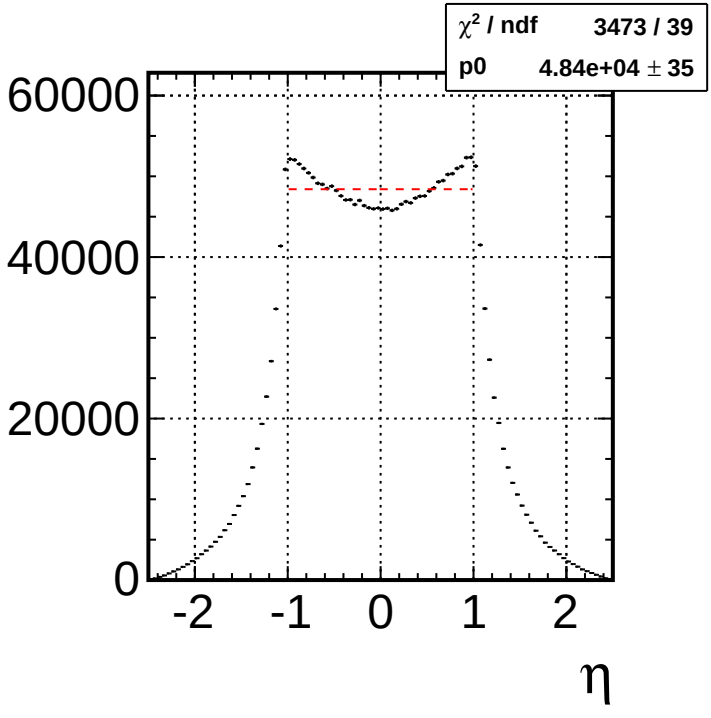


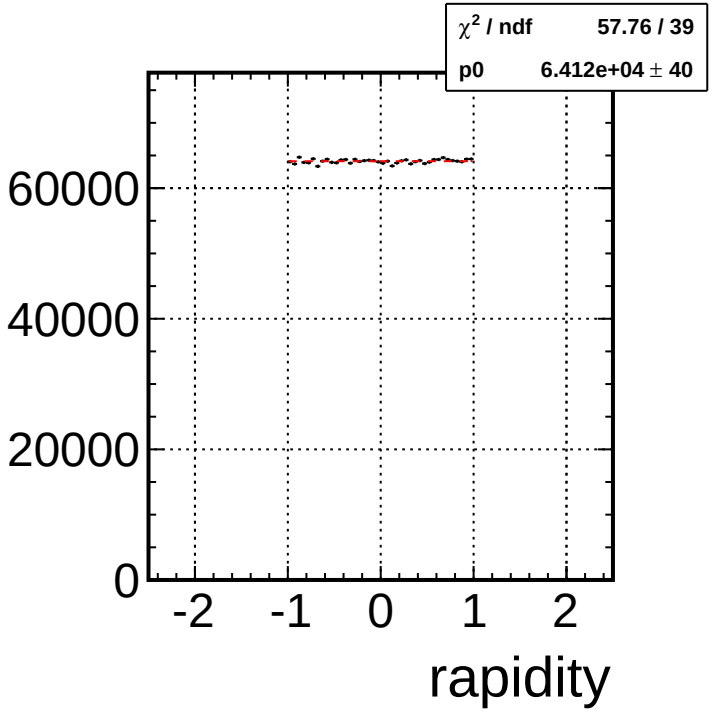


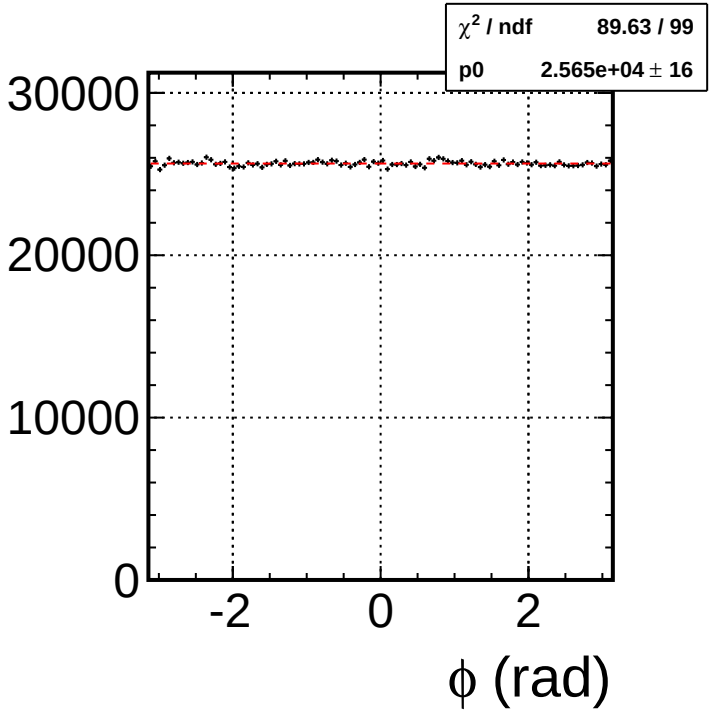


MC track QA (1D)

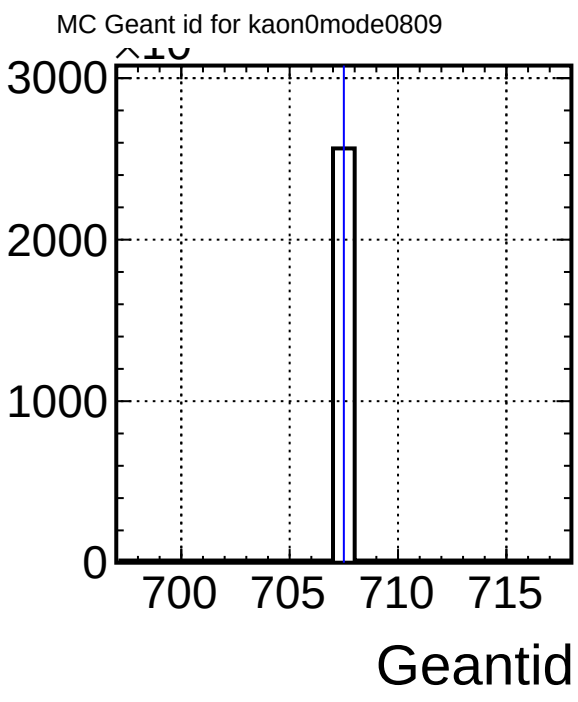


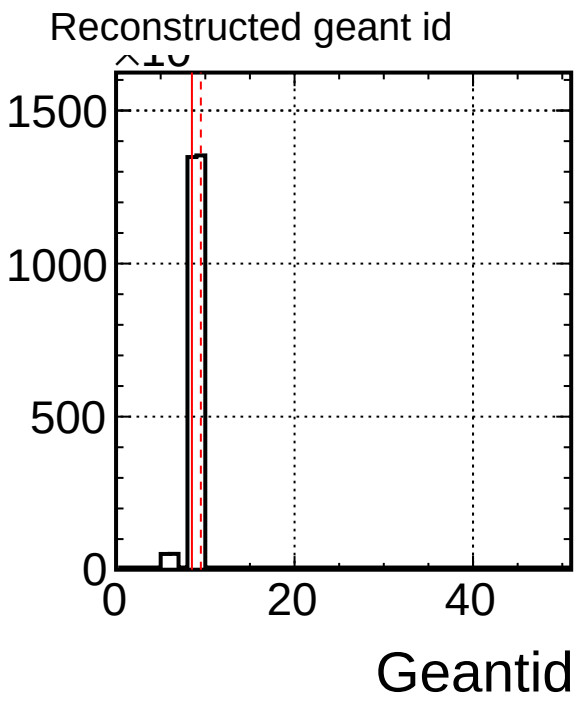






Geant id





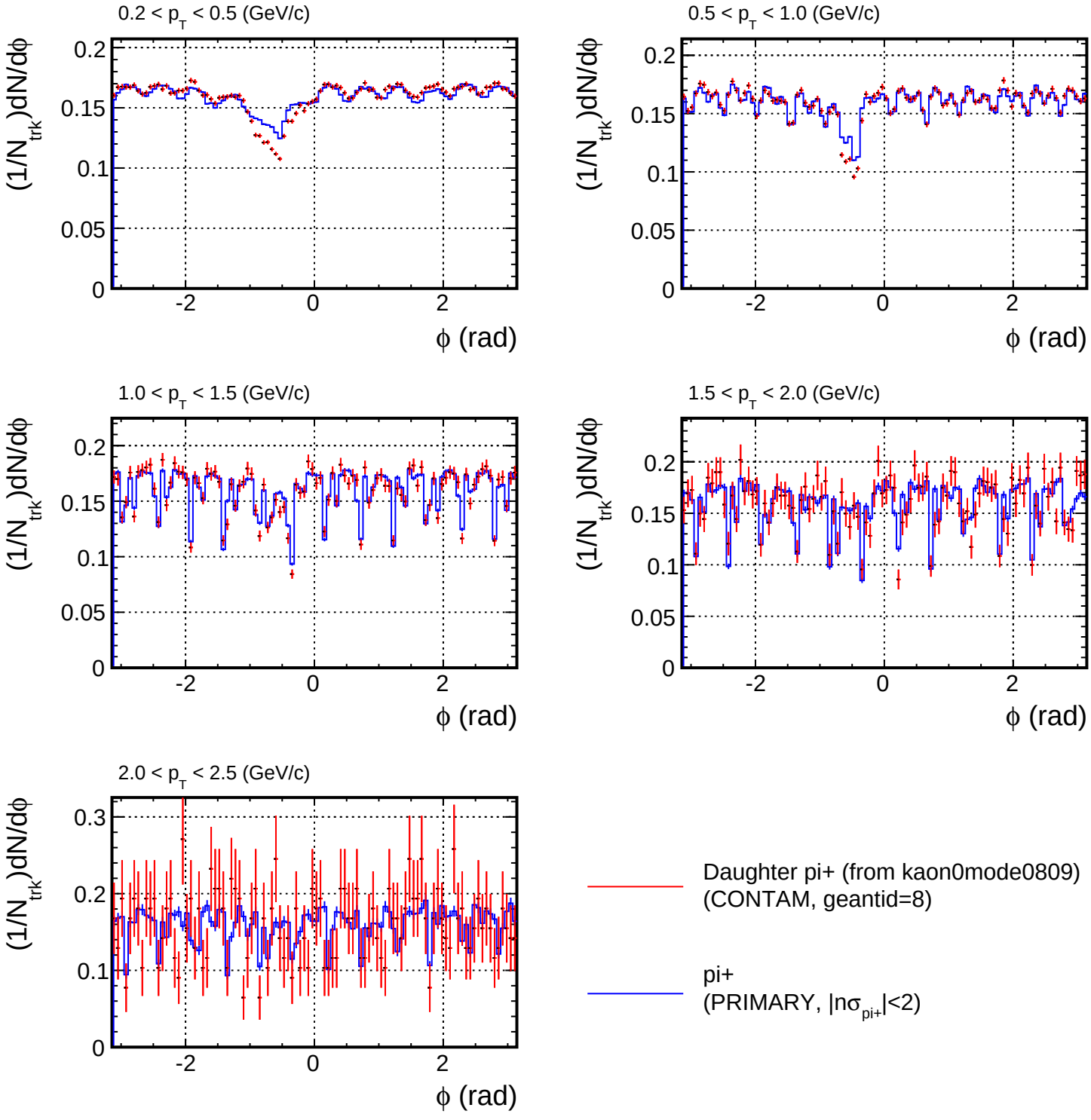
Particle informations

Parent kaon0mode0809 (MC, geantid=707)

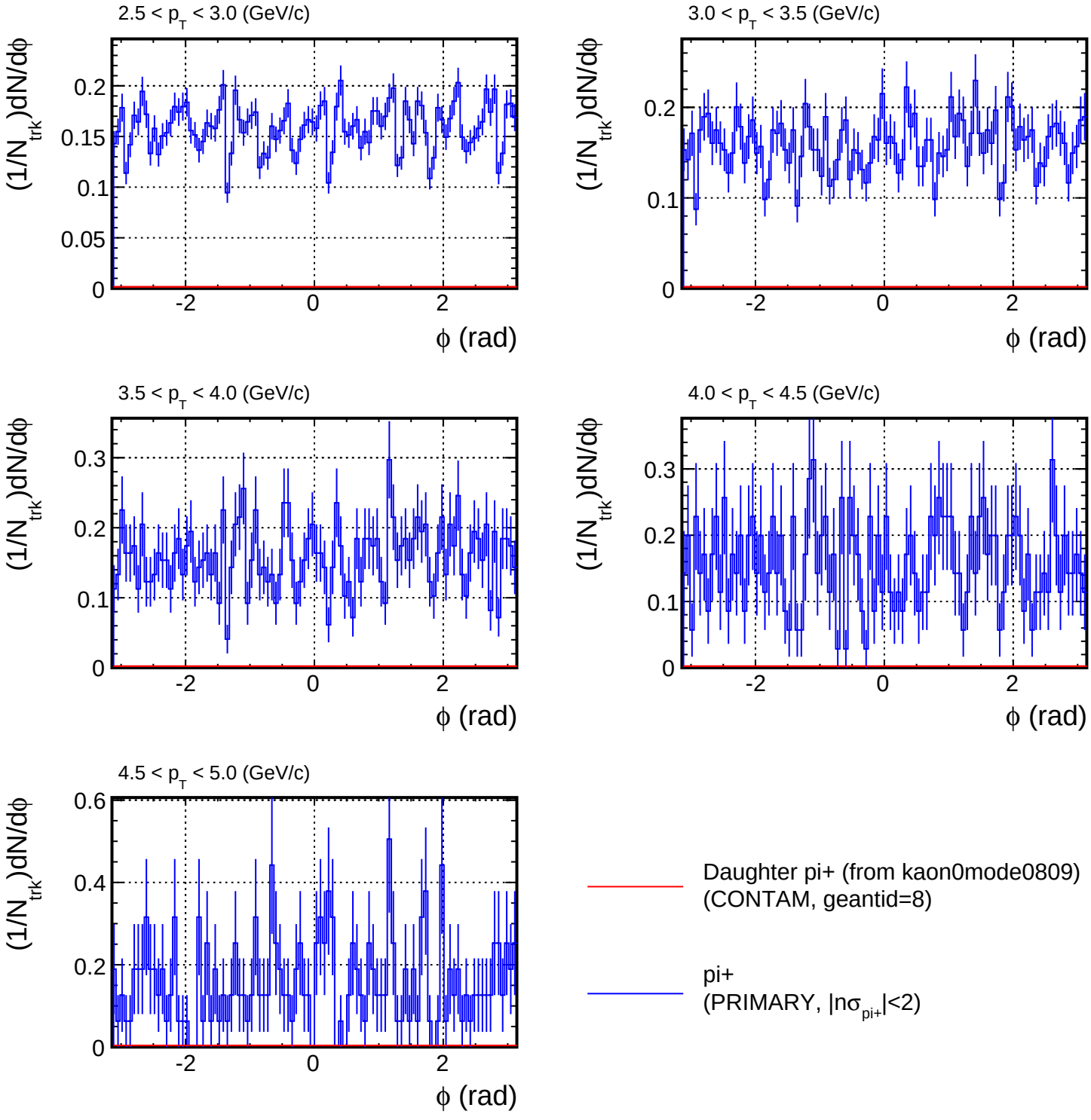
Daughter pi+ (from kaon0mode0809) (CONTAM, geantid=8)

Daughter pi- (from kaon0mode0809) (CONTAM, geantid=9)

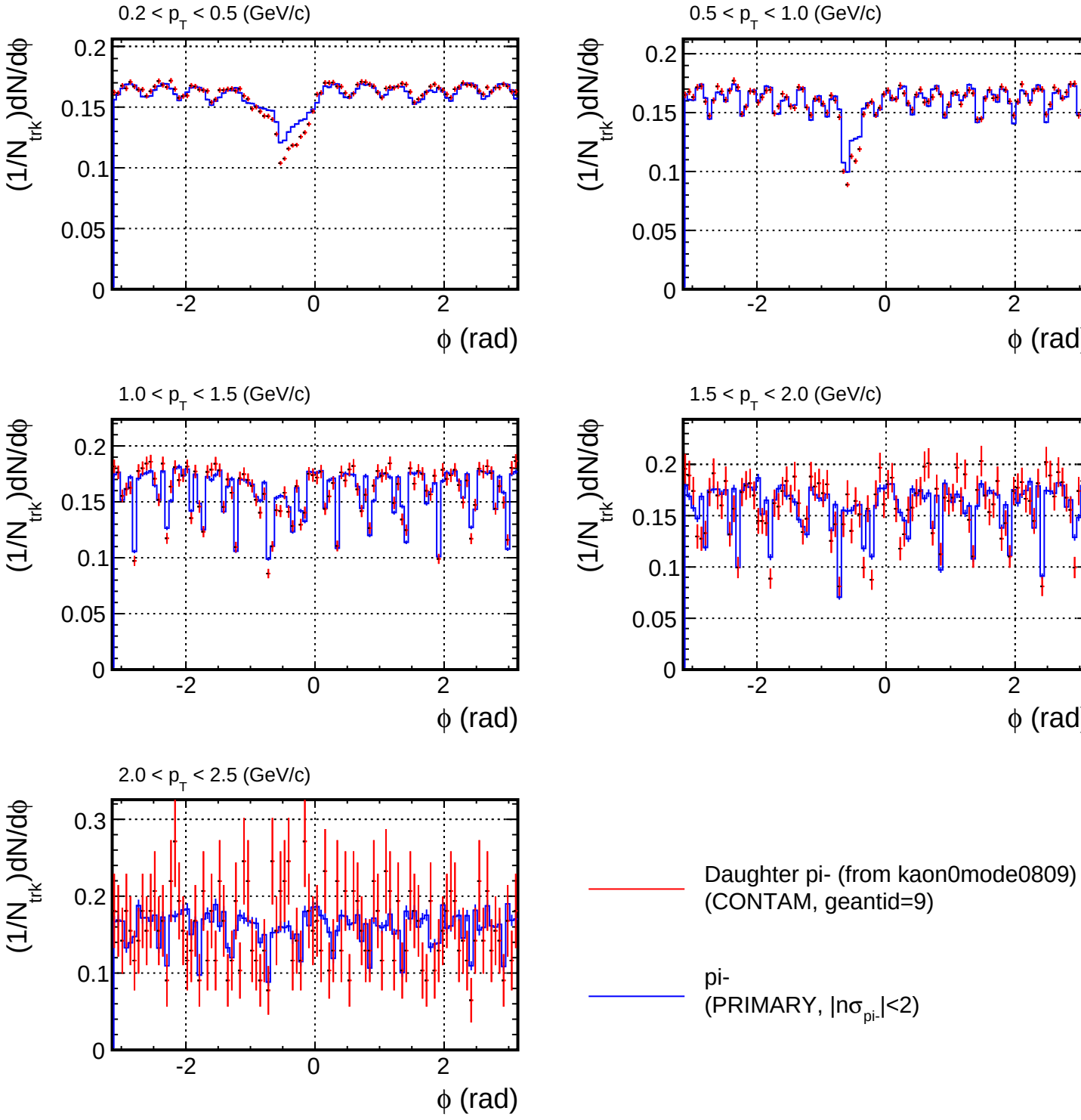
Projection of ϕ for each p_T bin



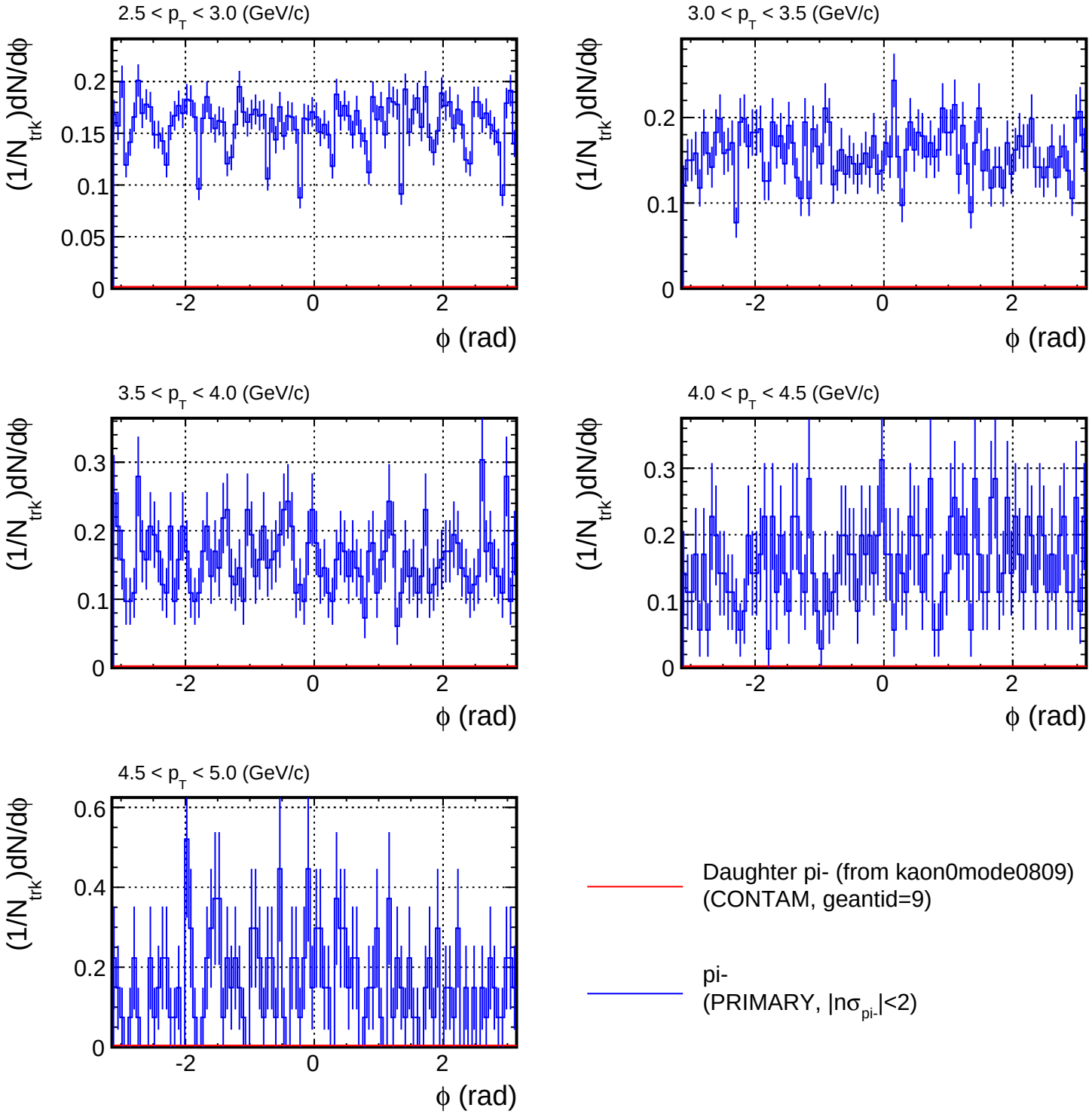
Projection of ϕ for each p_T bin



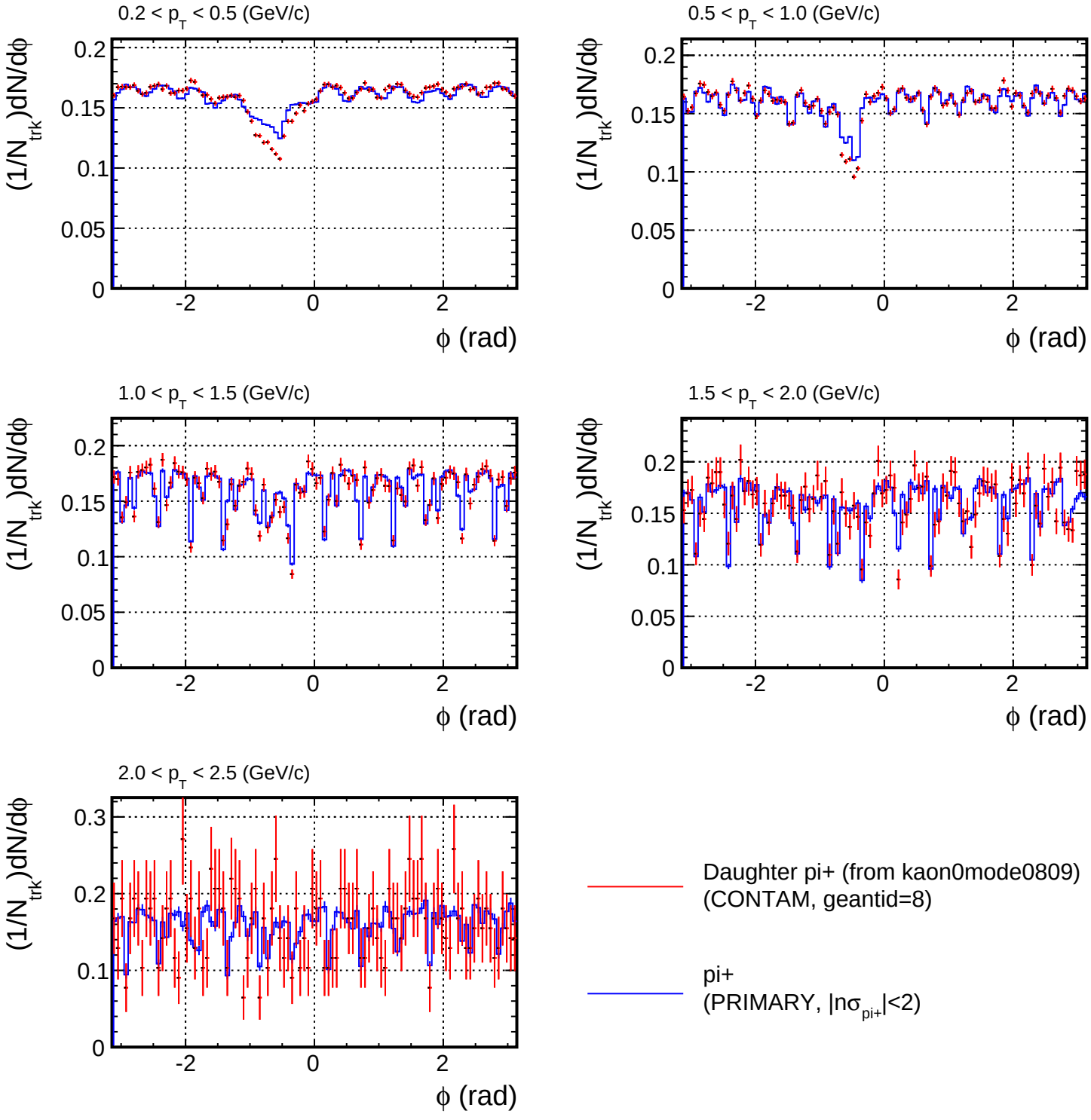
Projection of ϕ for each p_T bin



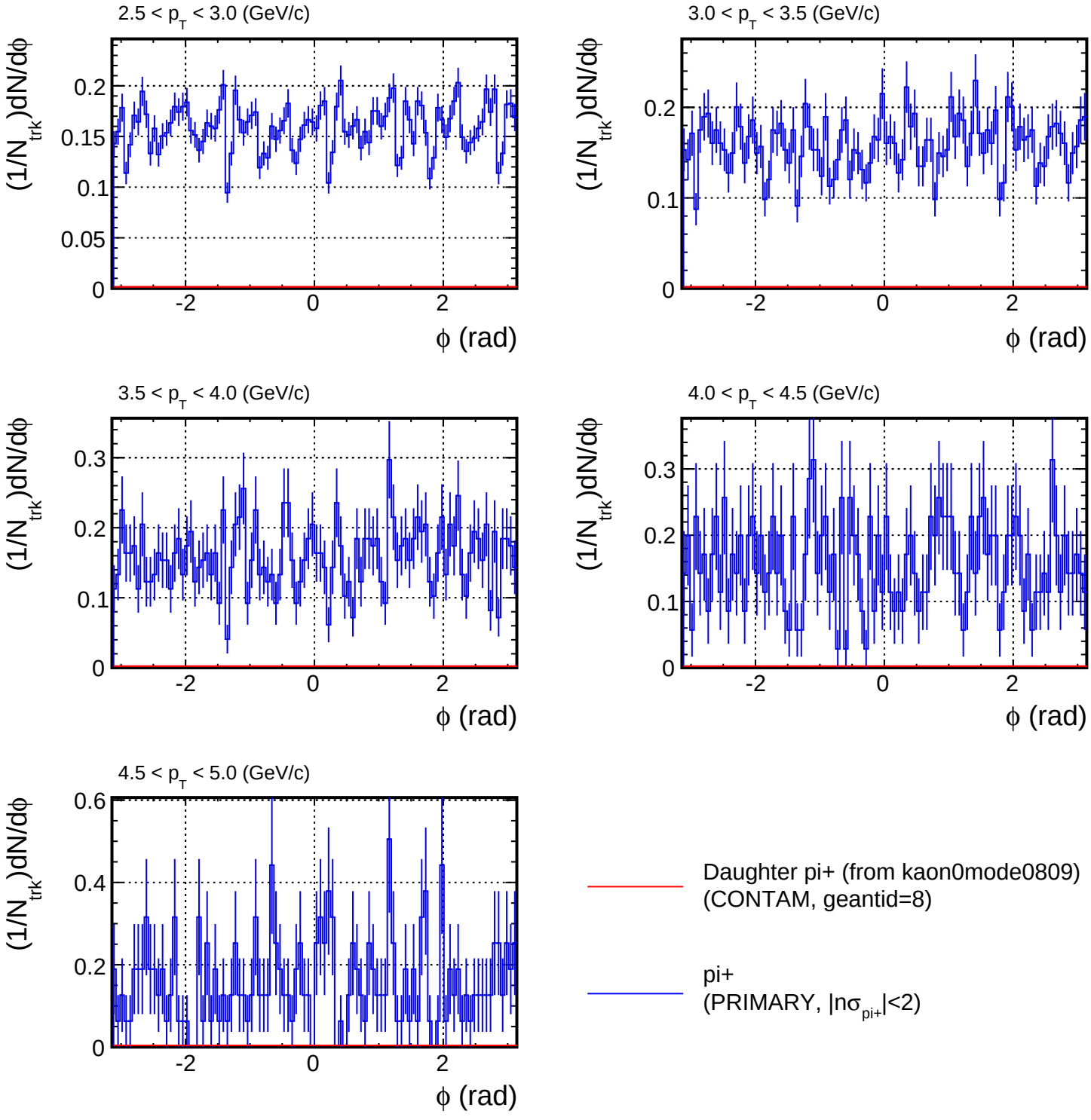
Projection of ϕ for each p_T bin



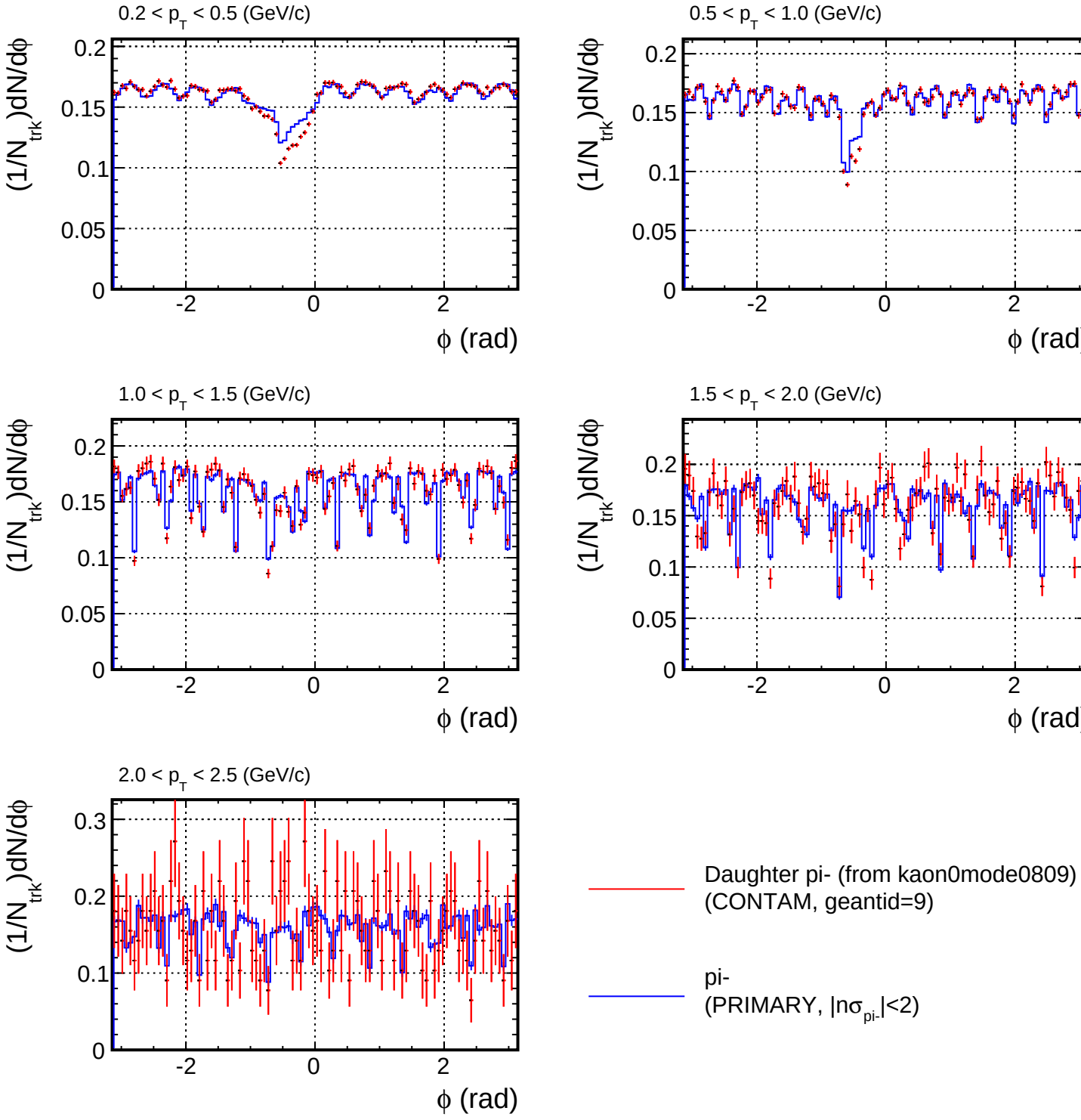
Projection of ϕ for each p_T bin



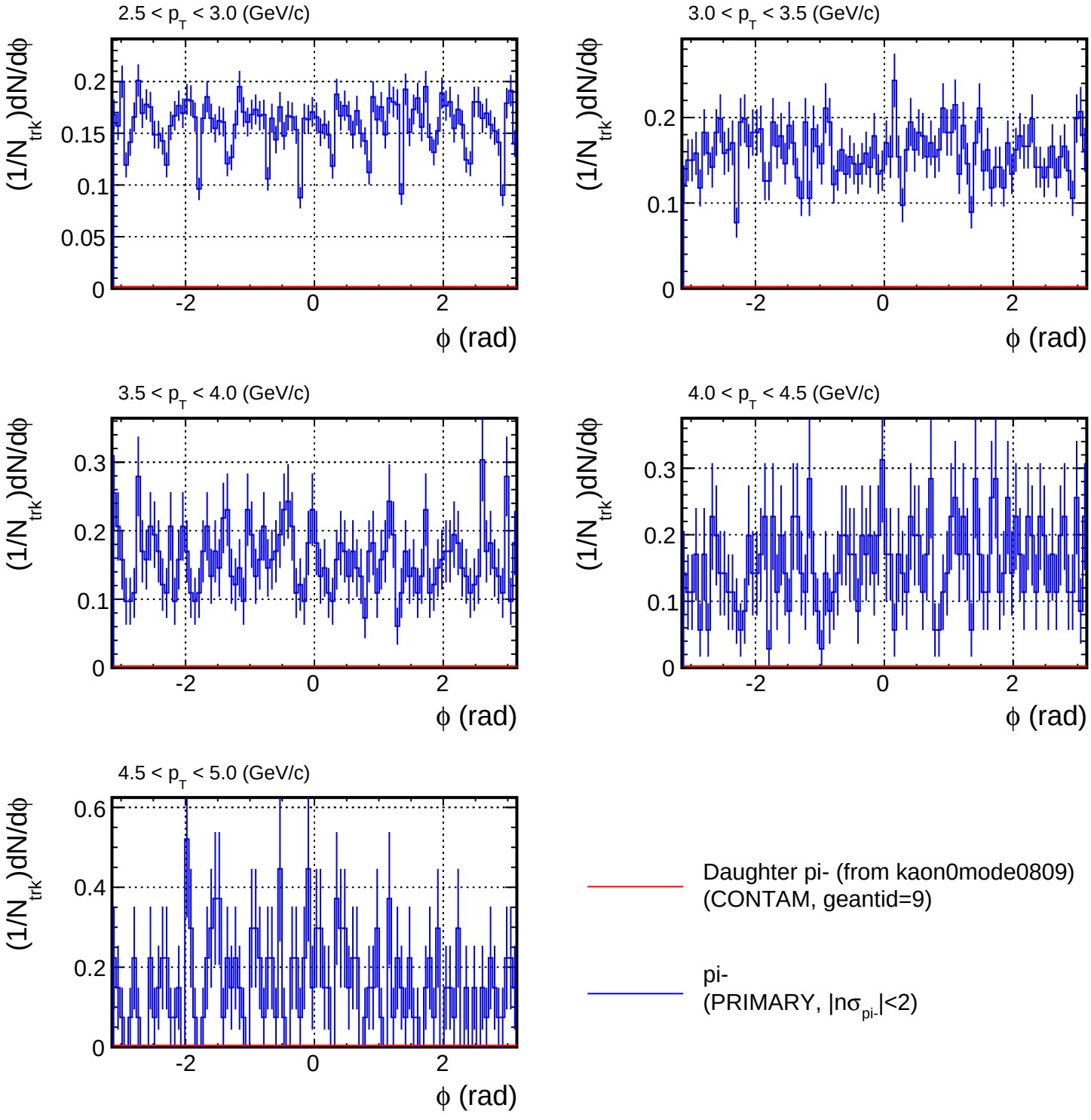
Projection of ϕ for each p_T bin



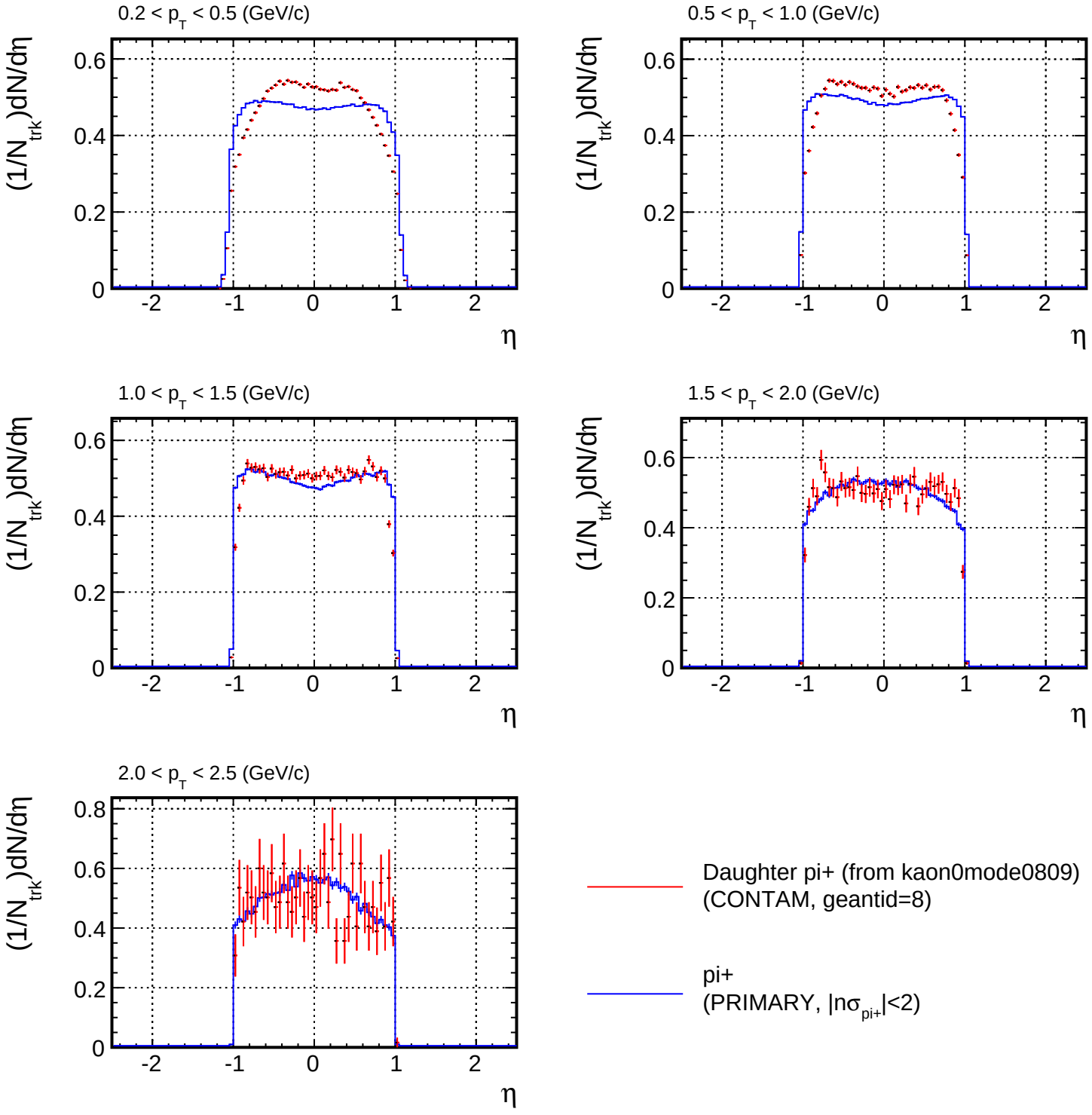
Projection of ϕ for each p_T bin



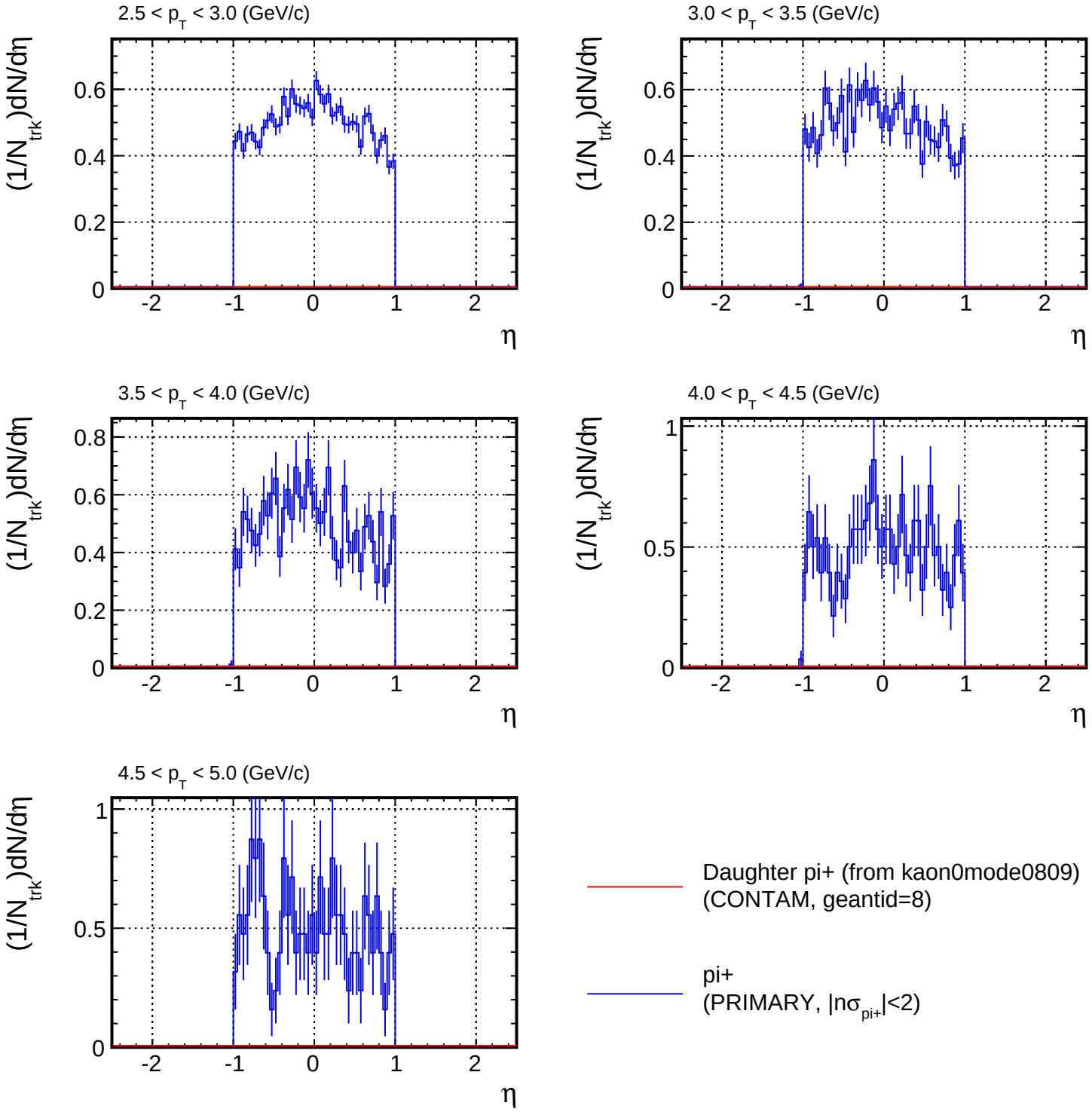
Projection of ϕ for each p_T bin



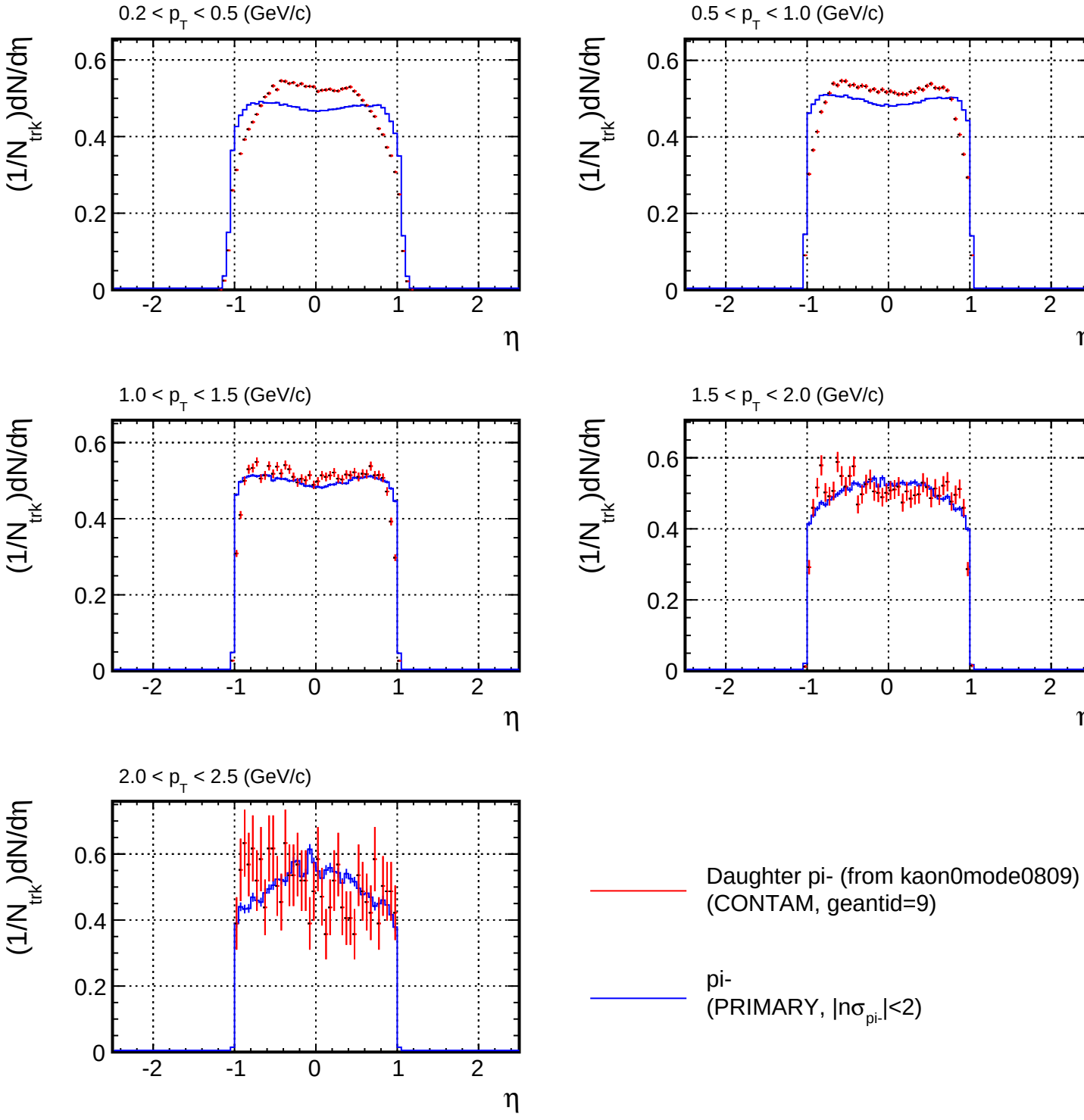
Projection of η for each p_T bin



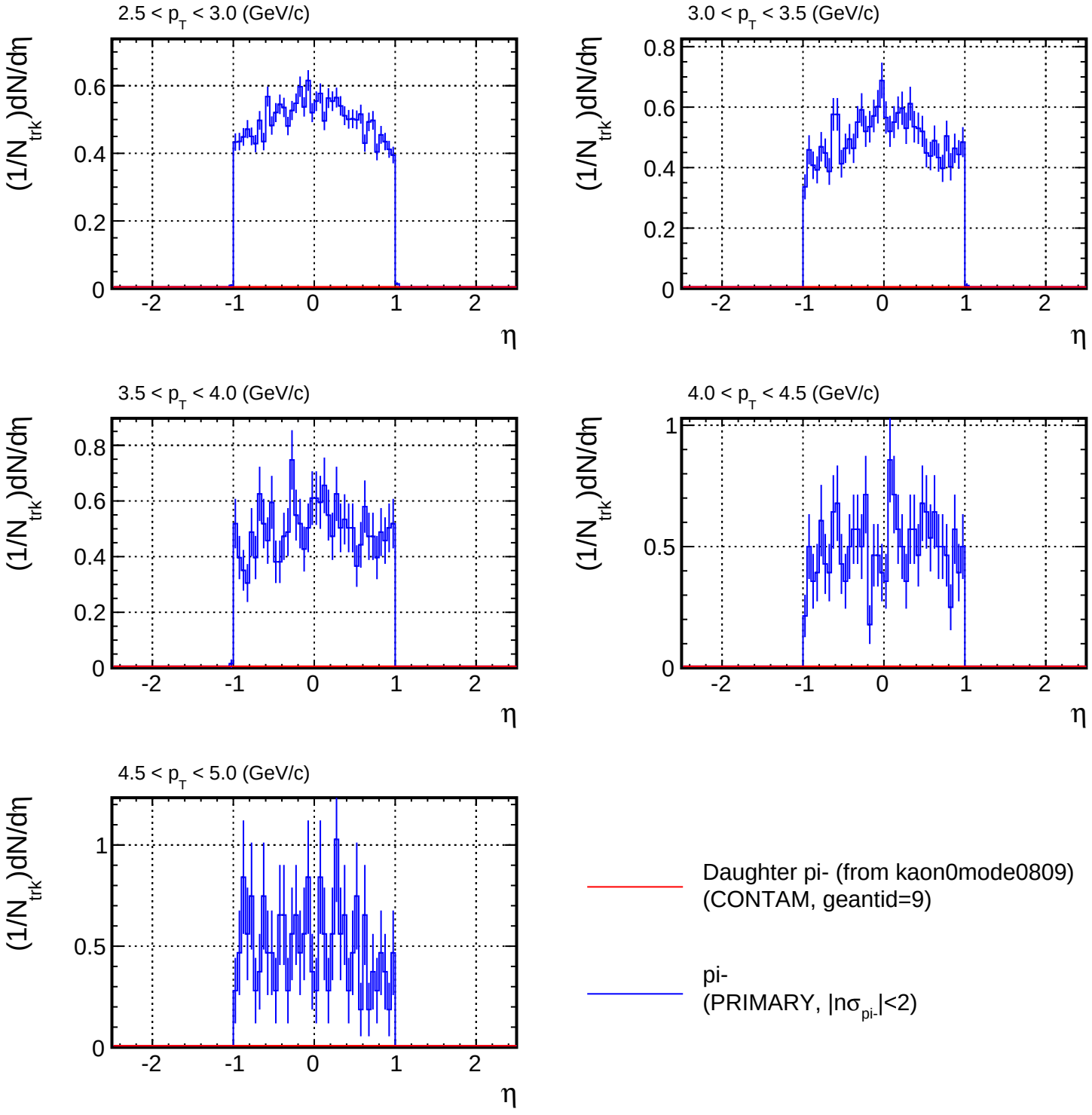
Projection of η for each p_T bin



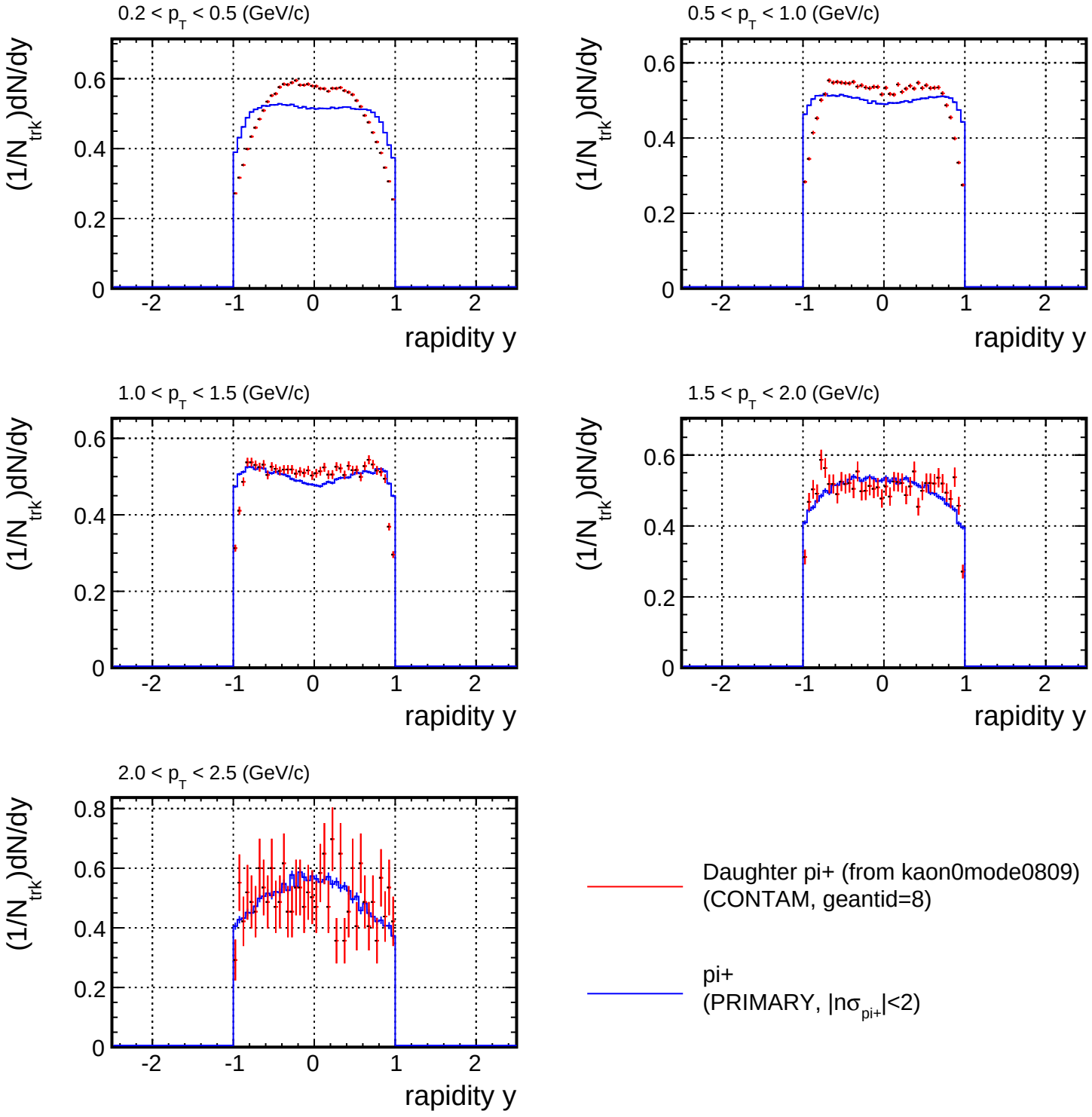
Projection of η for each p_T bin



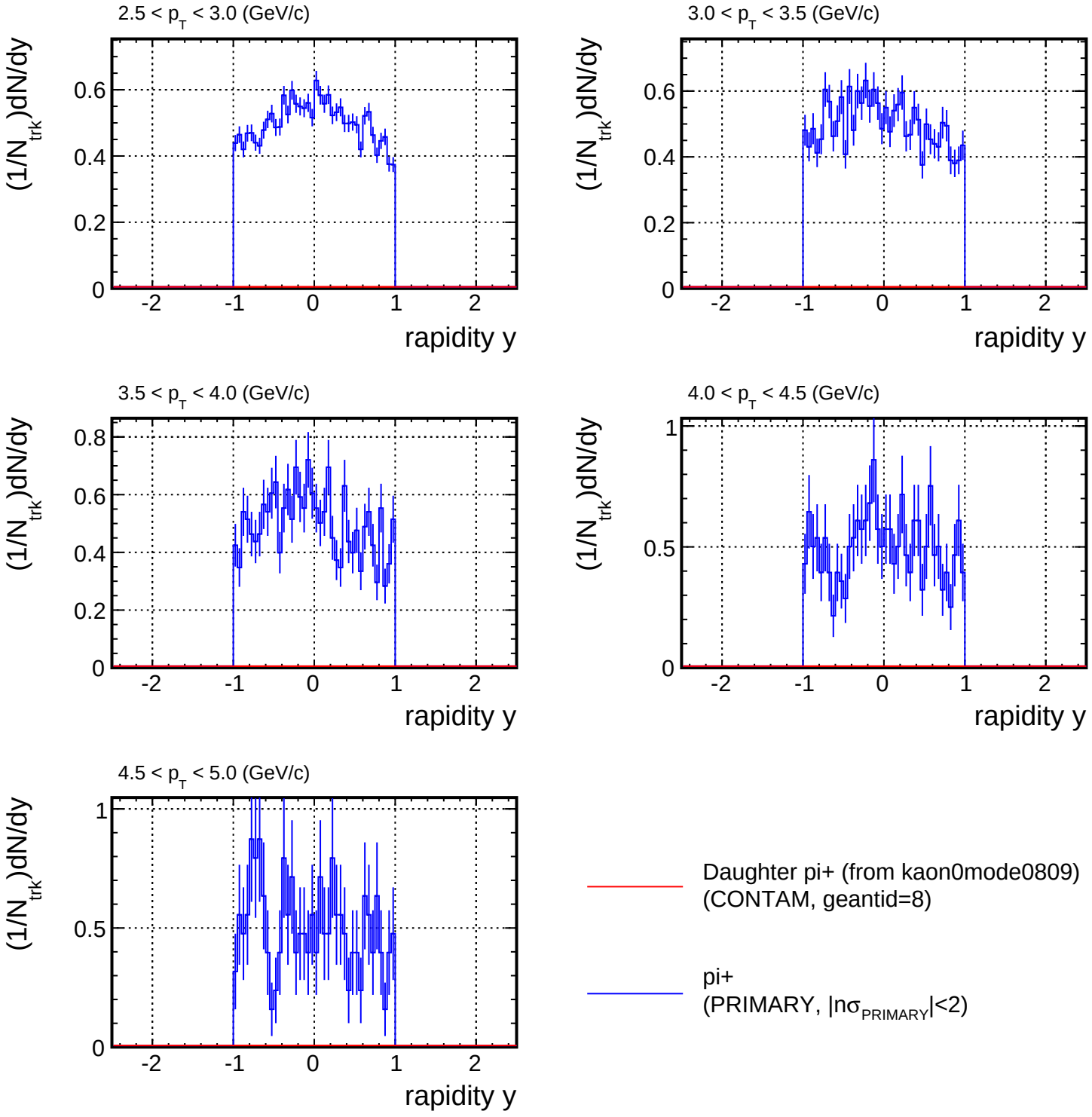
Projection of η for each p_T bin



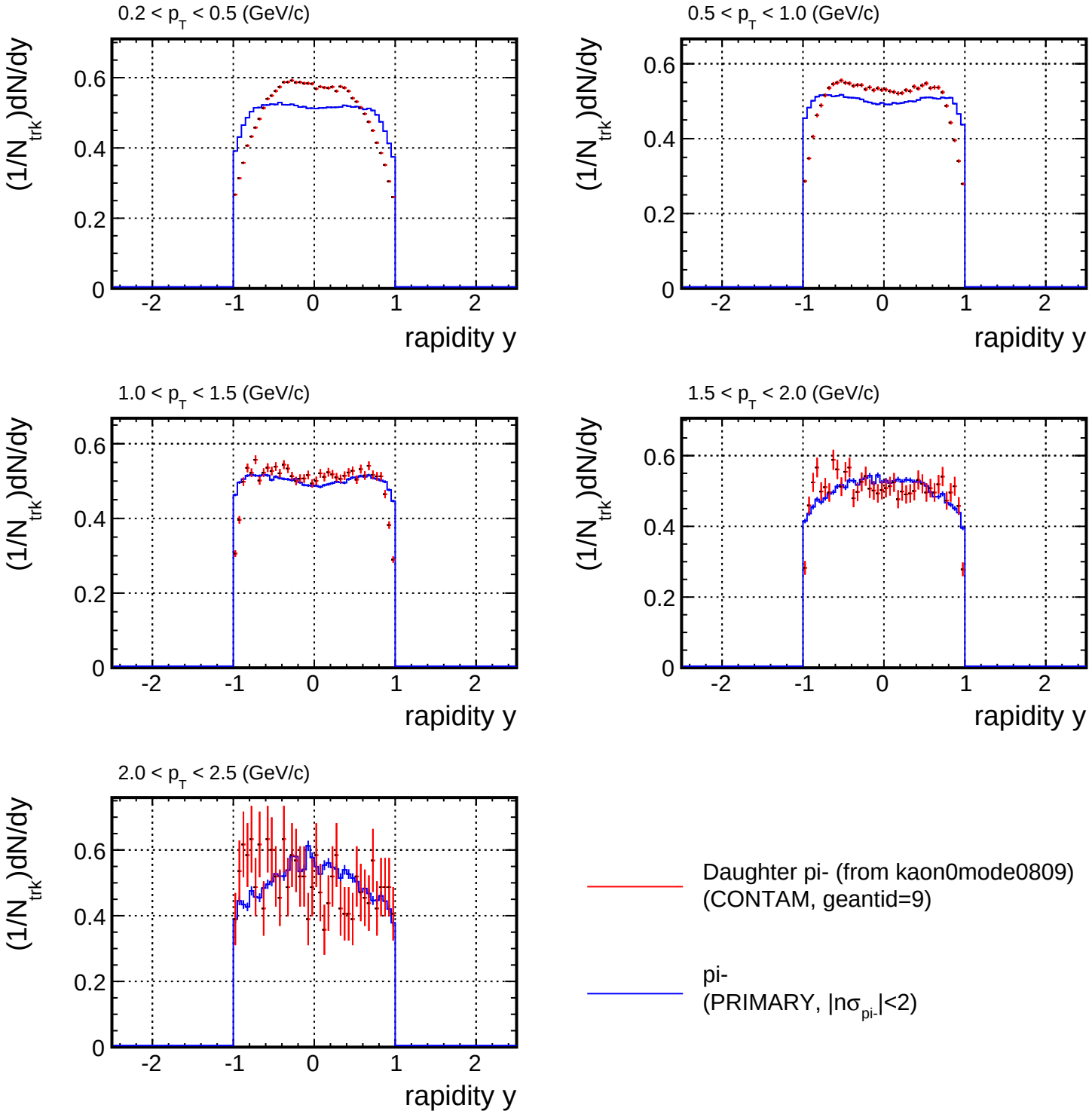
Projection of y for each p_T bin



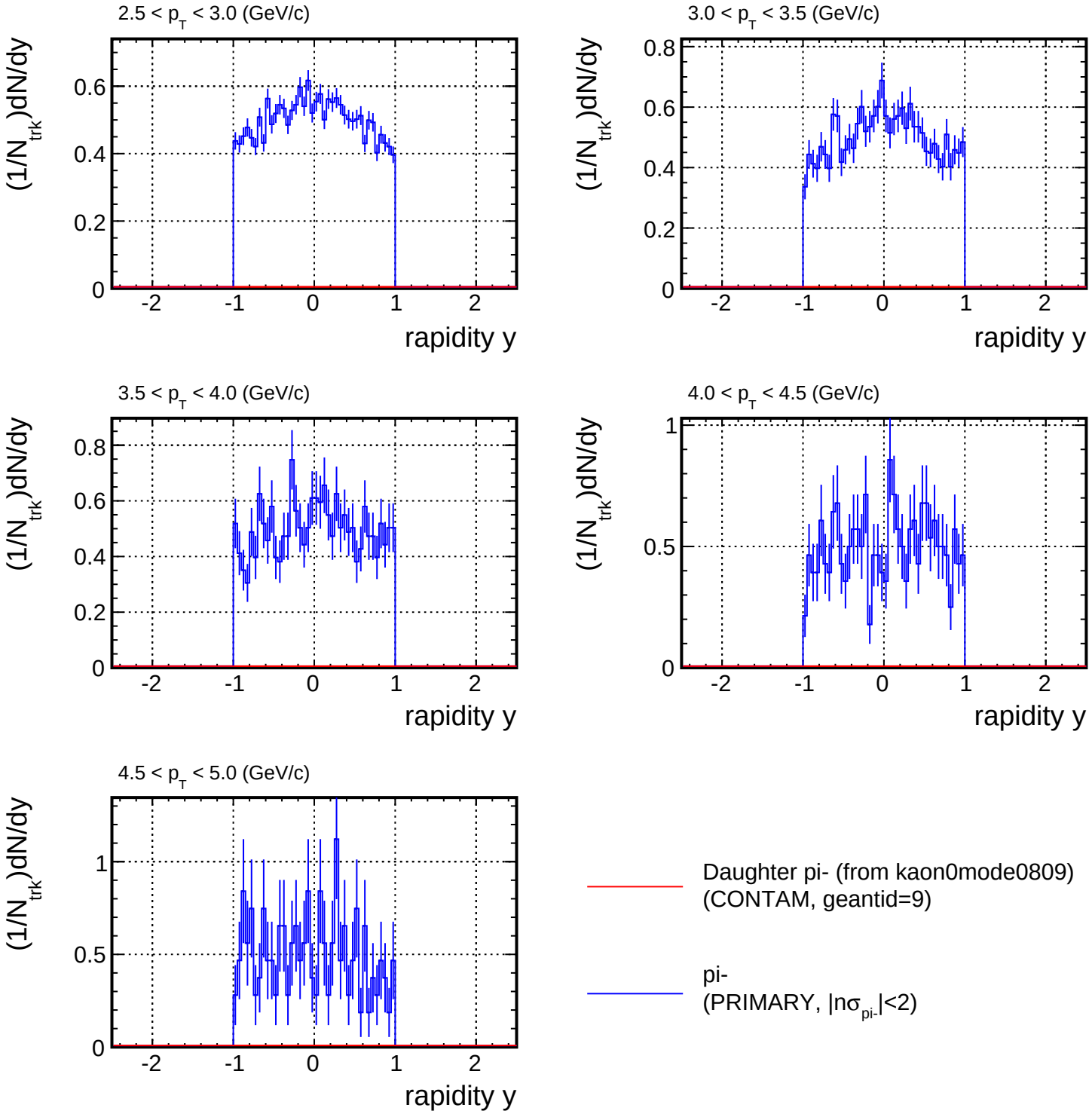
Projection of y for each p_T bin



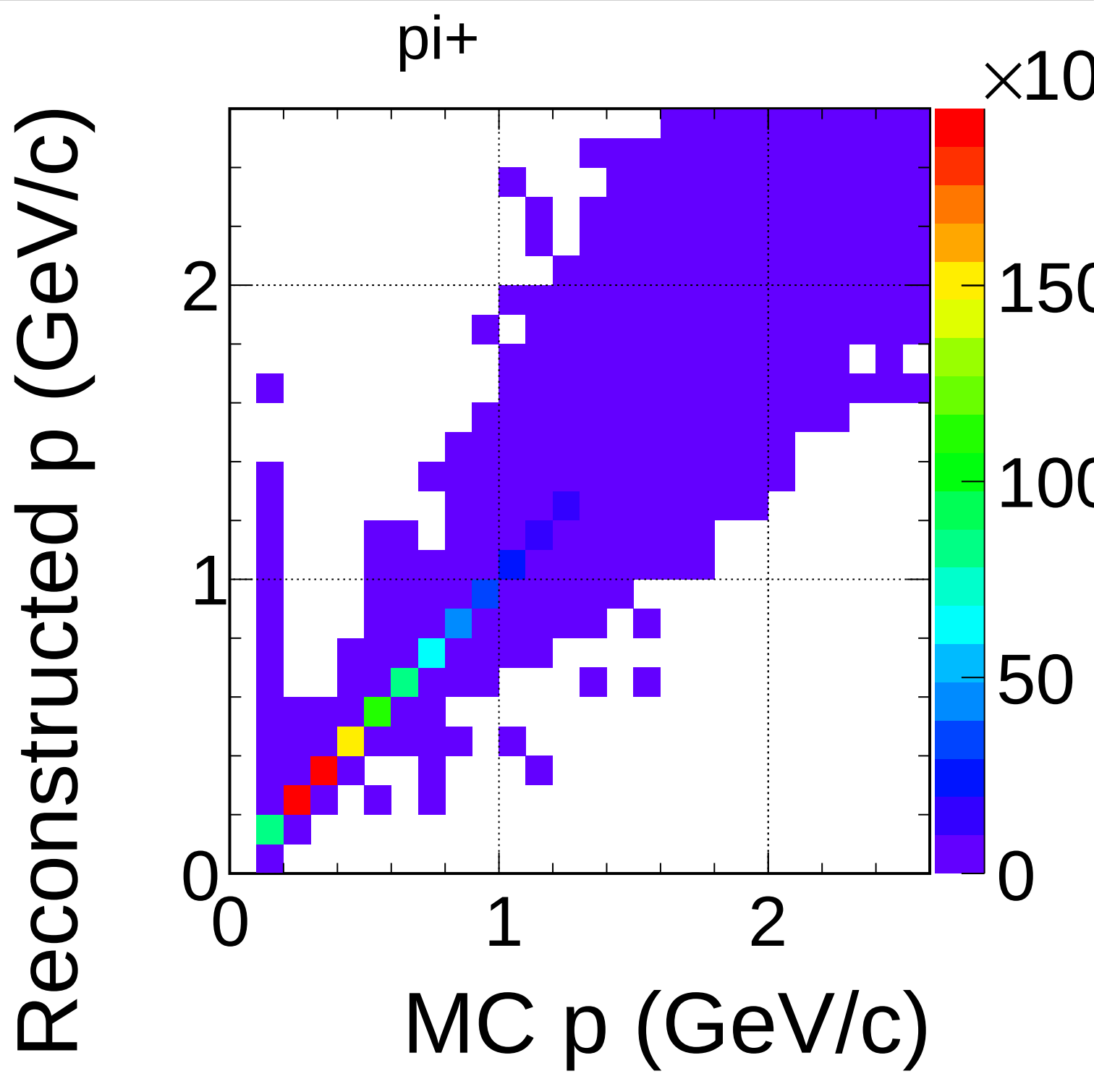
Projection of y for each p_T bin



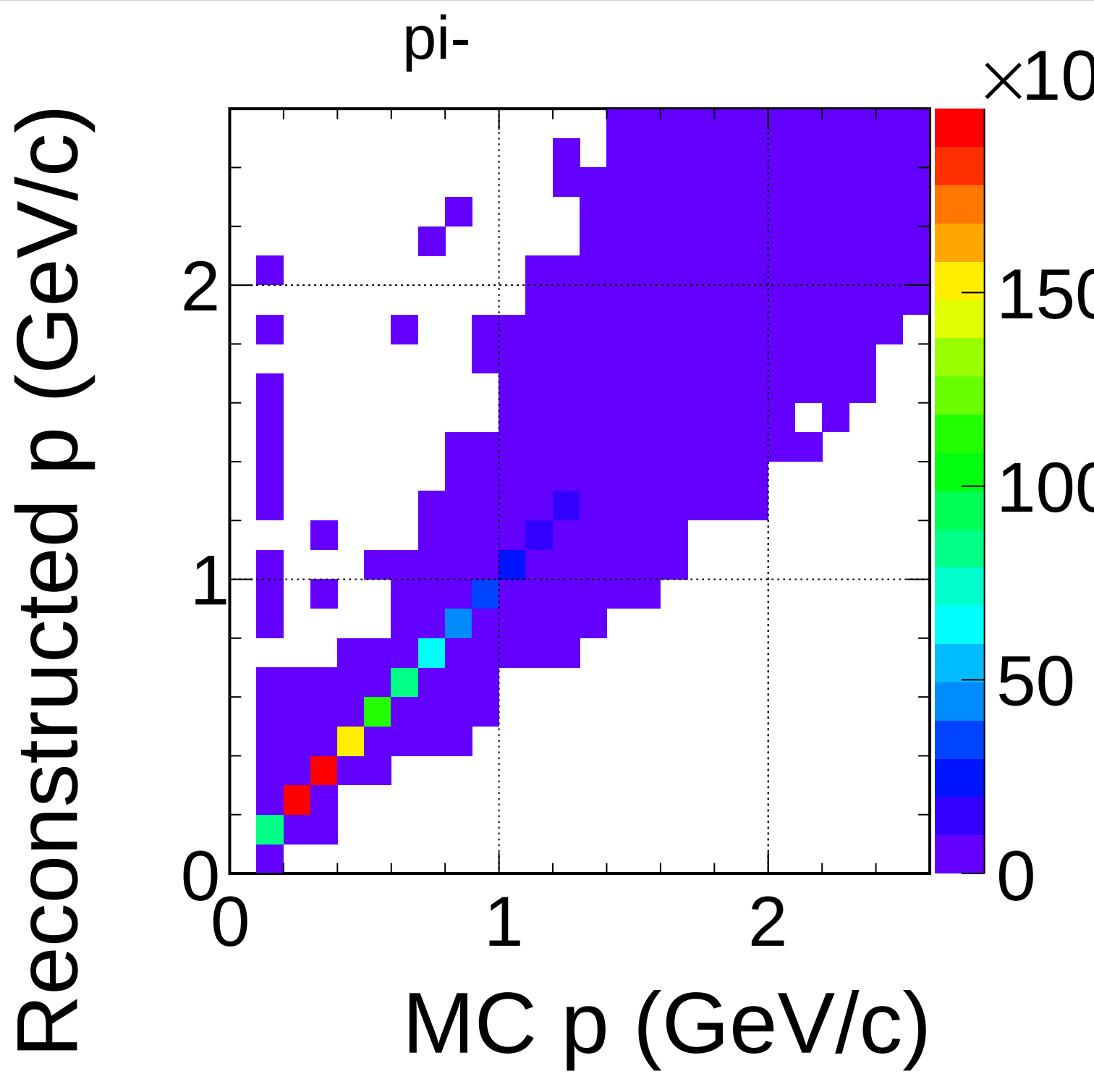
Projection of y for each p_T bin



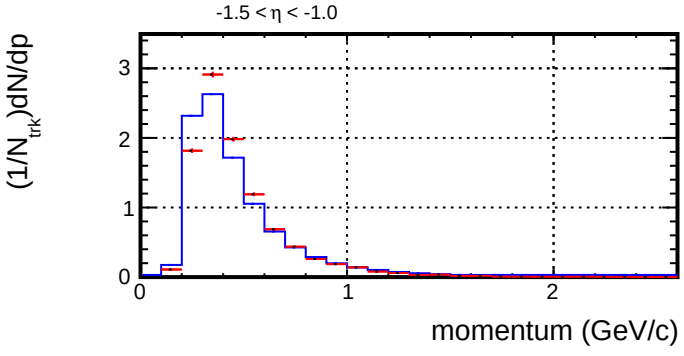
Reconstructed momentum vs MC momentum

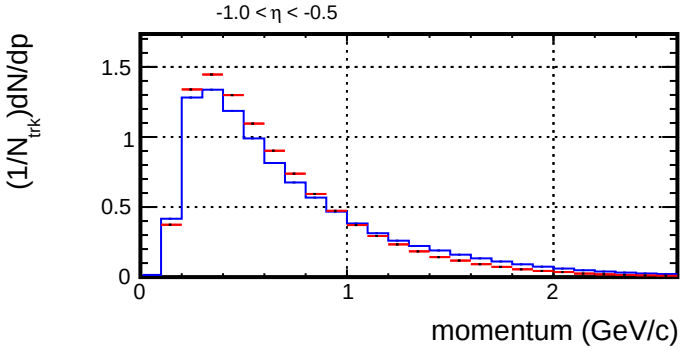


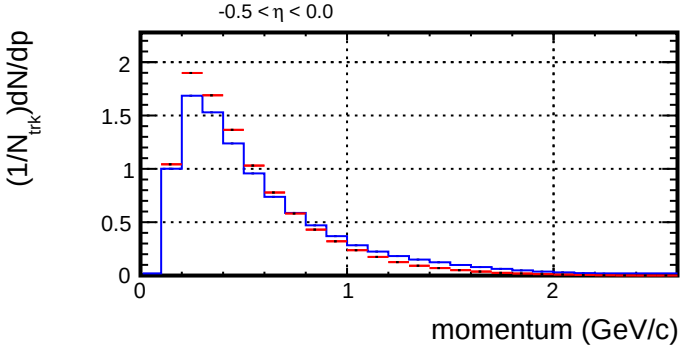
Reconstructed momentum vs MC momentum

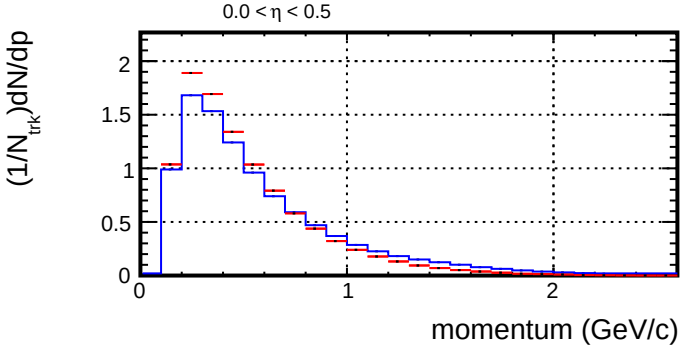


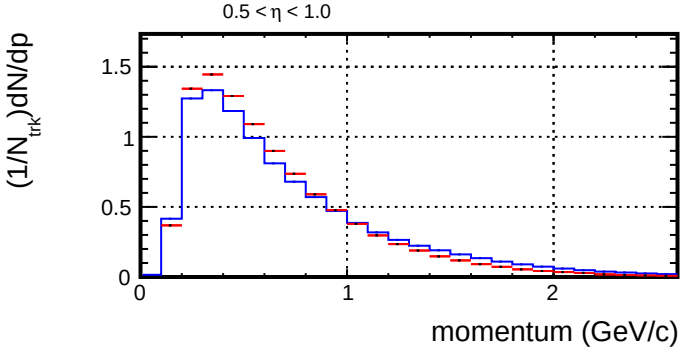
Projection of p for each η bin

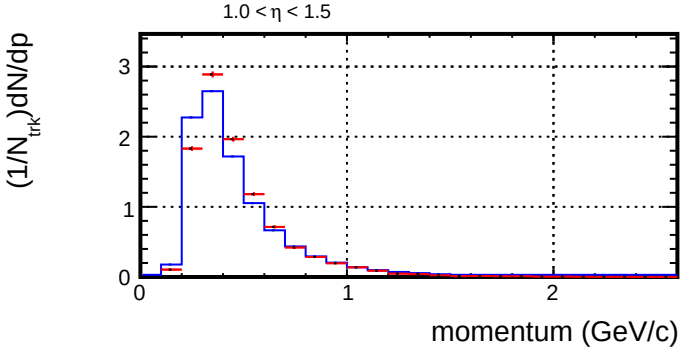








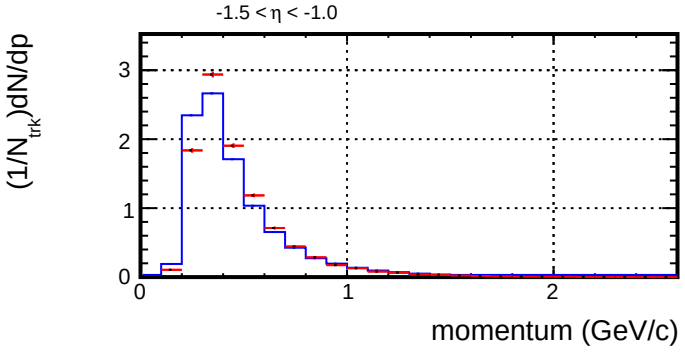


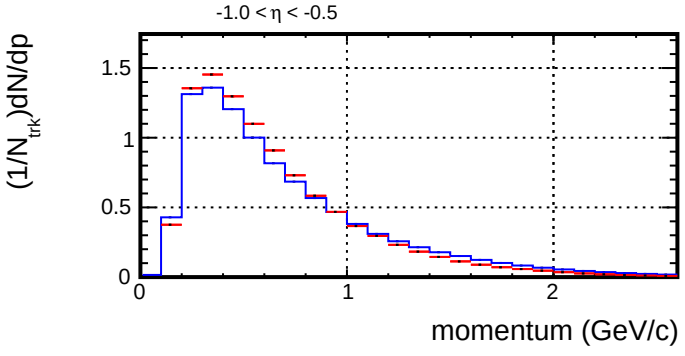


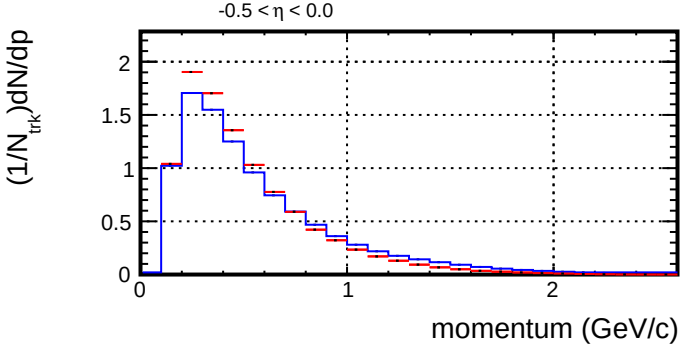
Daughter pi+ (from kaon0mode0809)
(CONTAM, geantid=8)

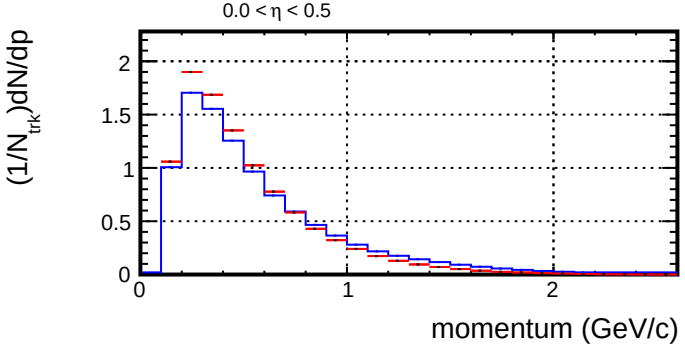
pi+
(PRIMARY, $|n\sigma_{pi+}|<2$)

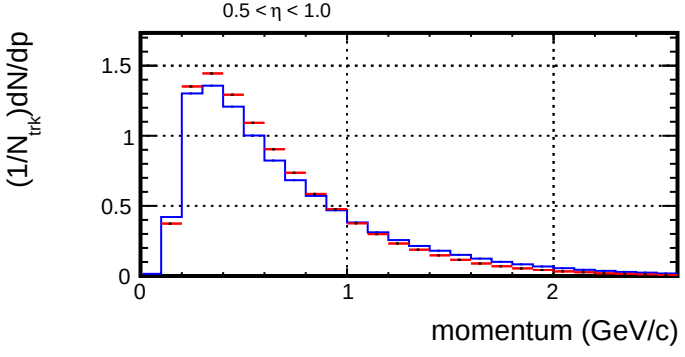
Projection of p for each η bin

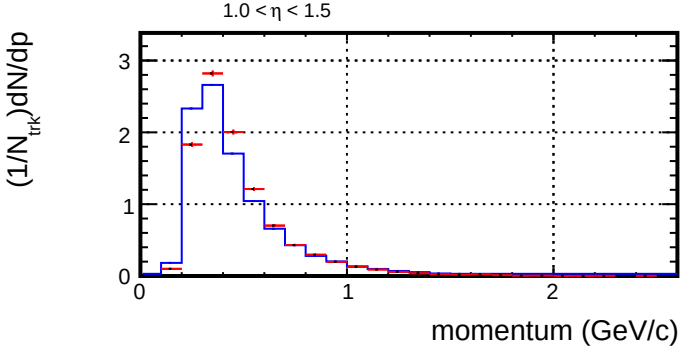








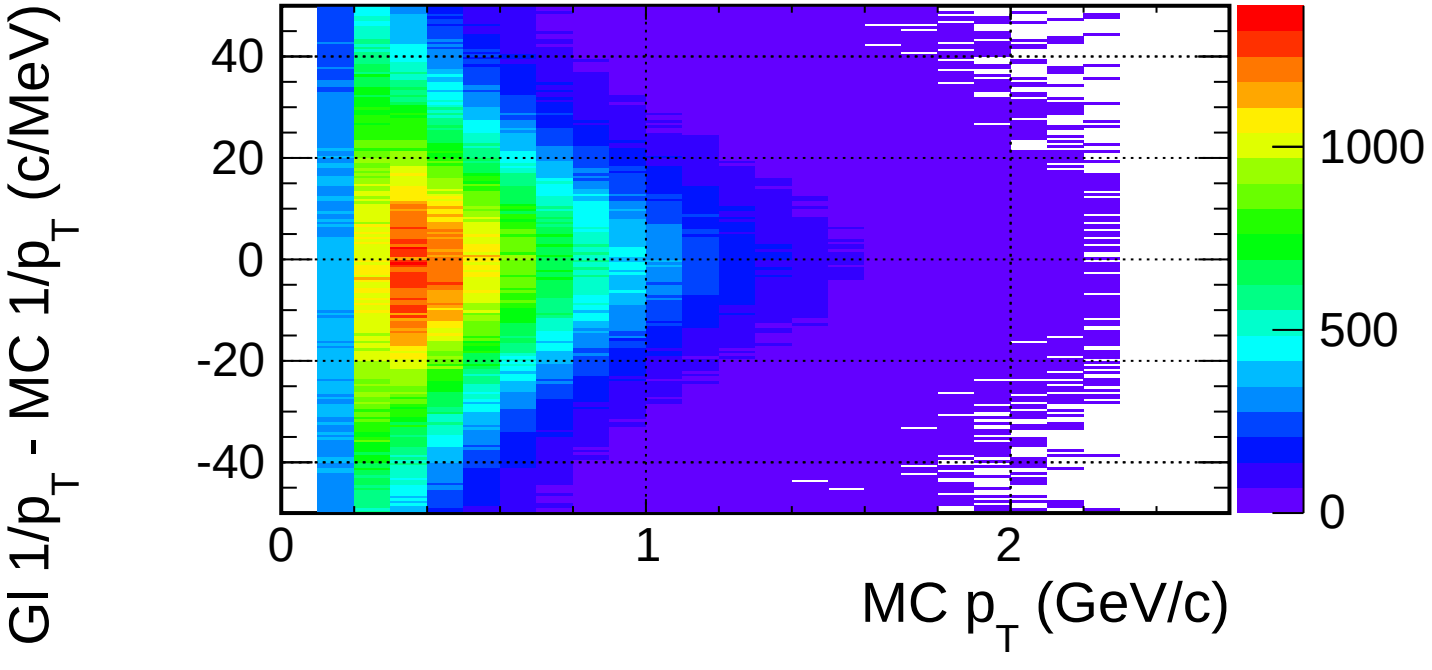


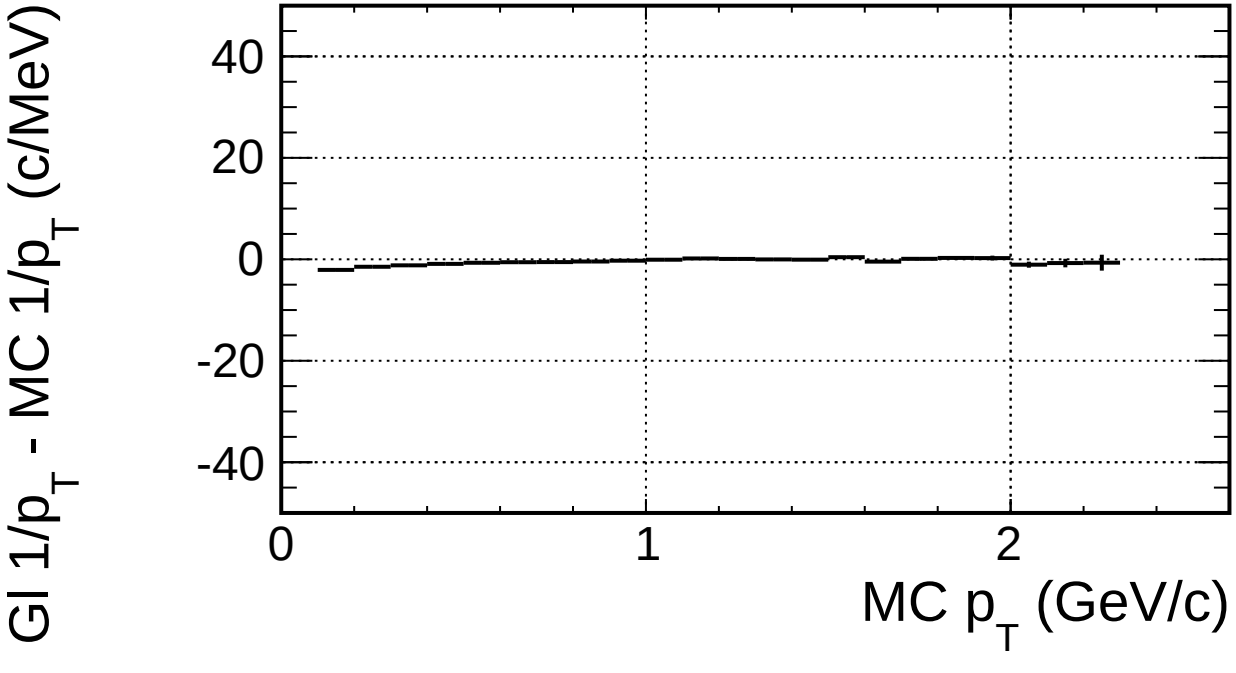


Daughter pi- (from kaon0mode0809)
(CONTAM, geantid=9)

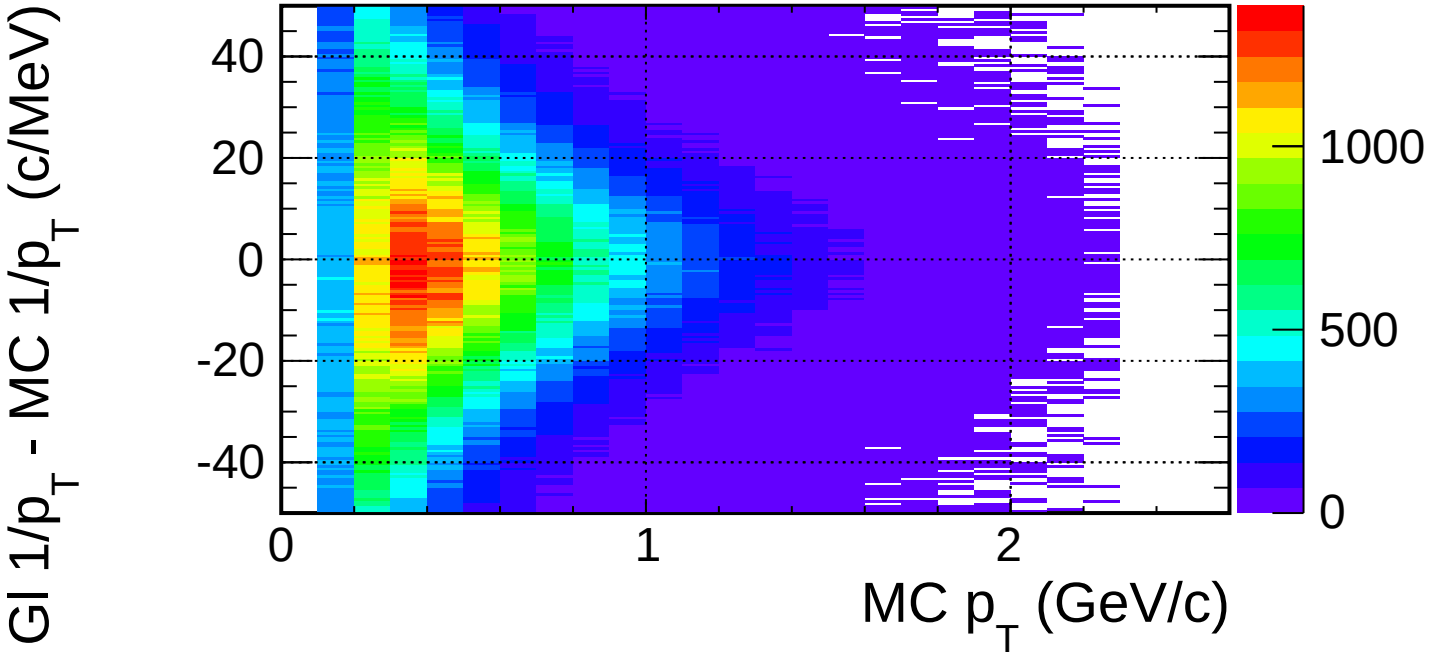
pi-
(PRIMARY, $|n\sigma_{pi-}|<2$)

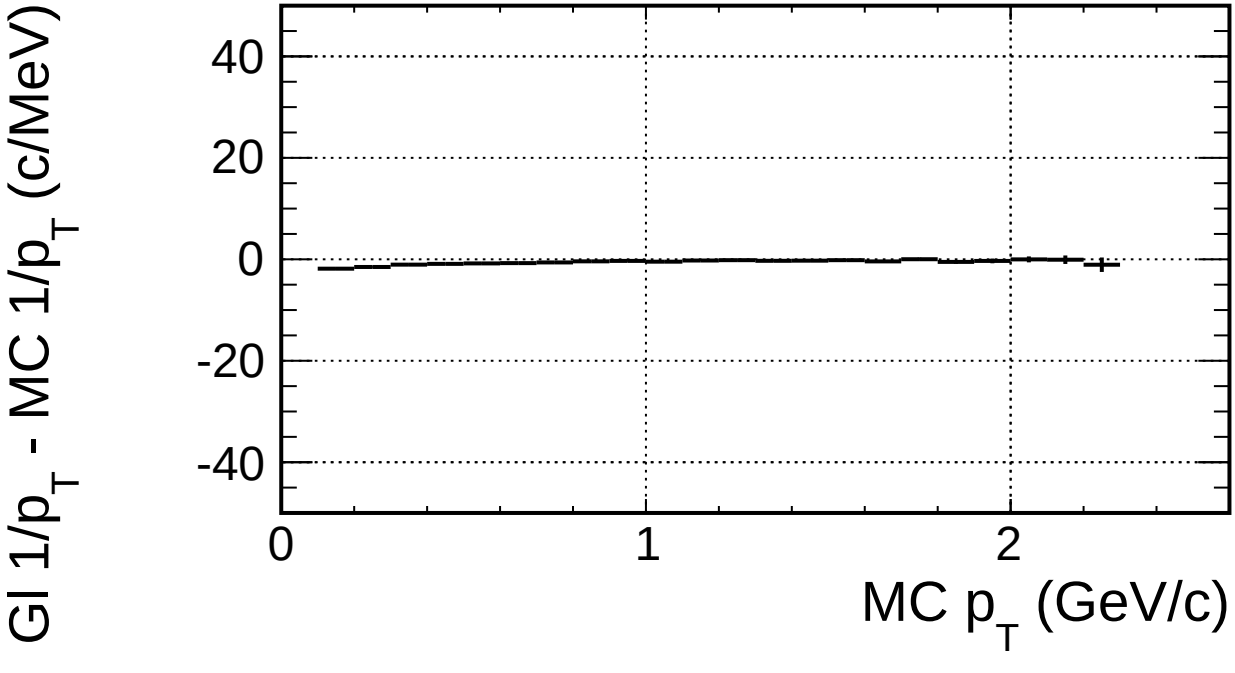
$1/p_T$ (Gl) - $1/p_T$ (MC) vs p_T (MC) (pi+)



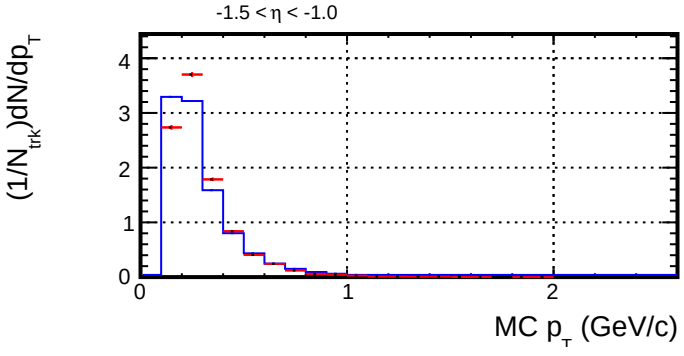


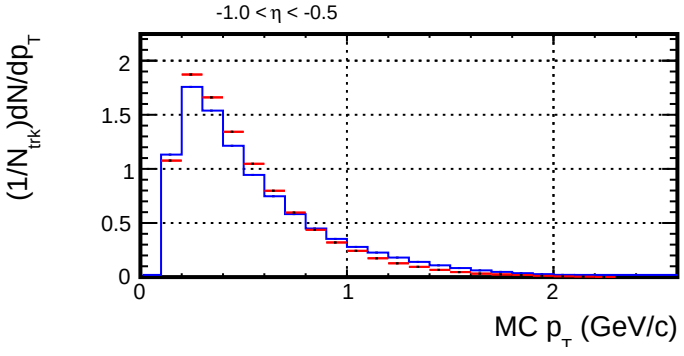
$1/p_T$ (Gl) - $1/p_T$ (MC) vs p_T (MC) (pi-)

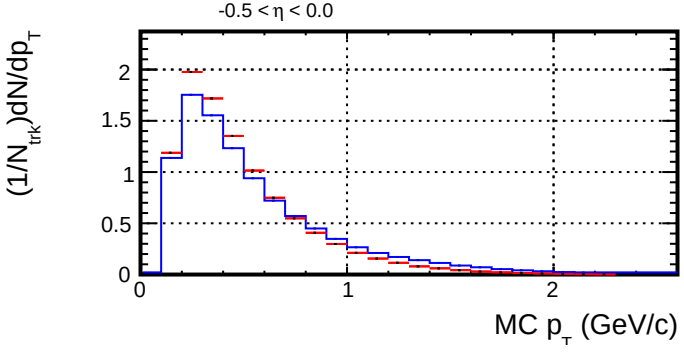


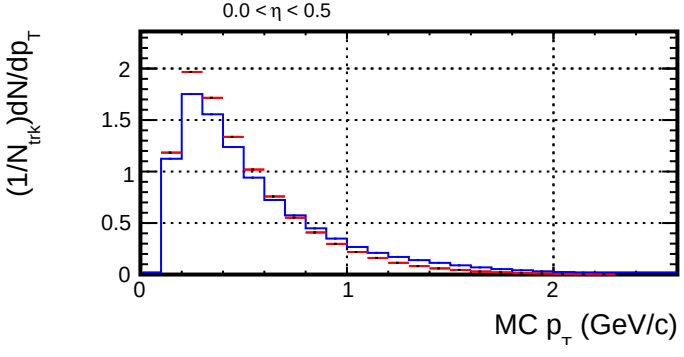


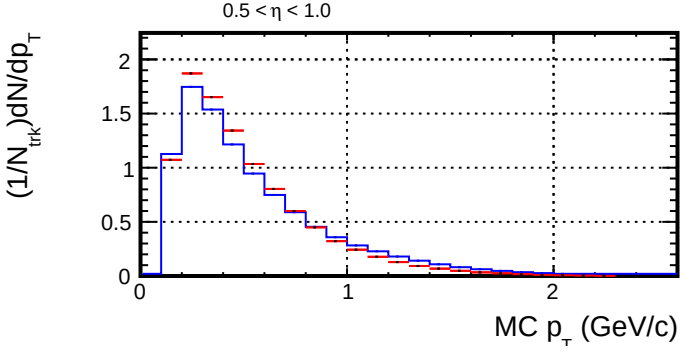
Projection of p_T for each η bin

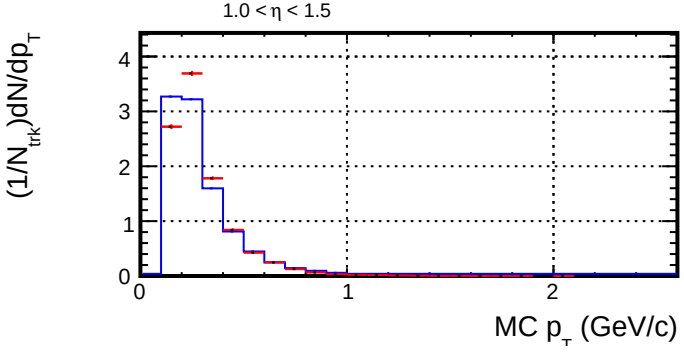








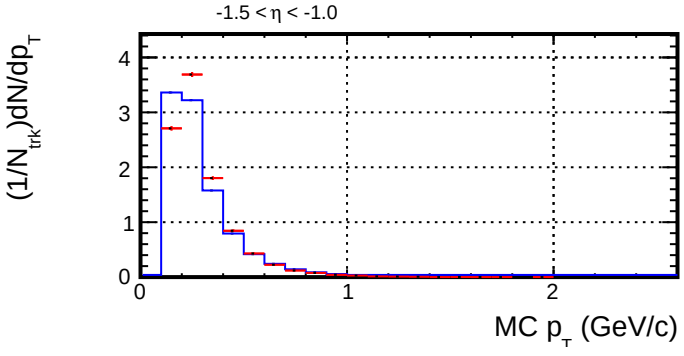


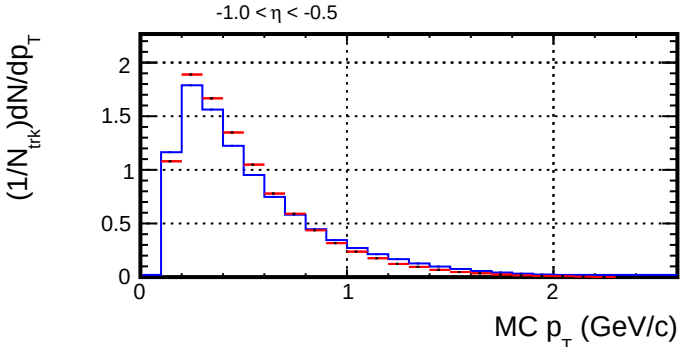


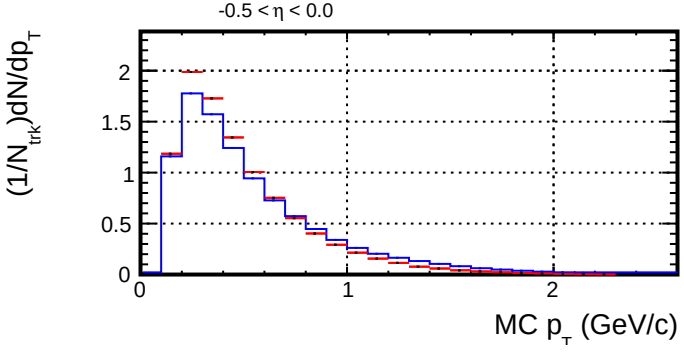
Daughter pi+ (from kaon0mode0809)
(CONTAM, geantid=8)

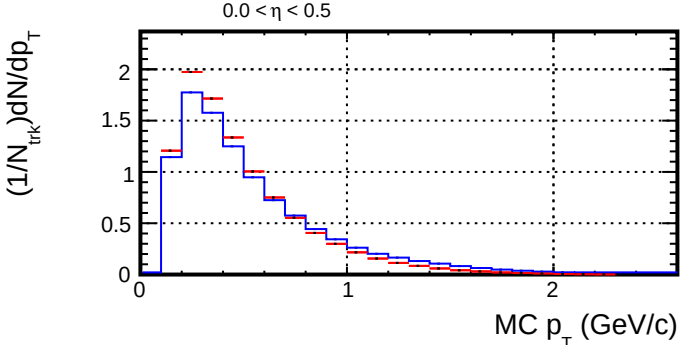
pi+
(PRIMARY, $|n\sigma_{PRIMARY}|<2$)

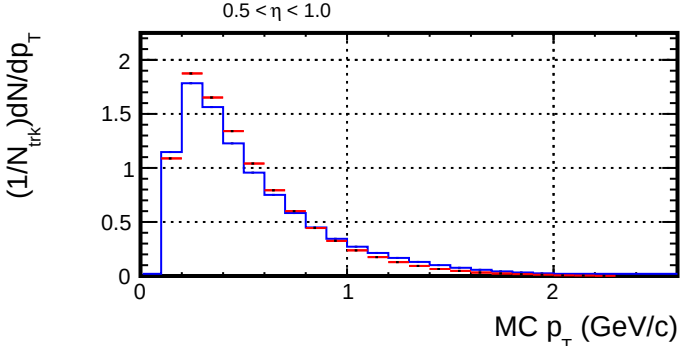
Projection of p_T for each η bin

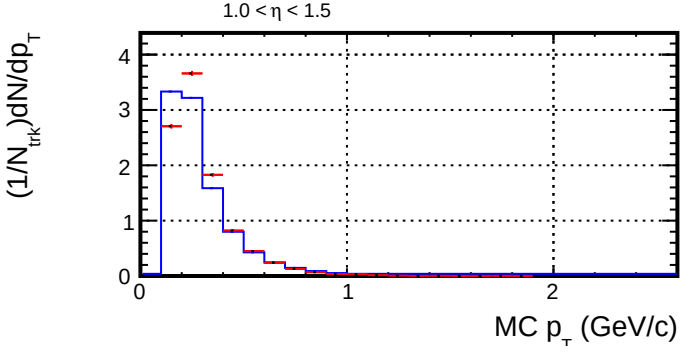








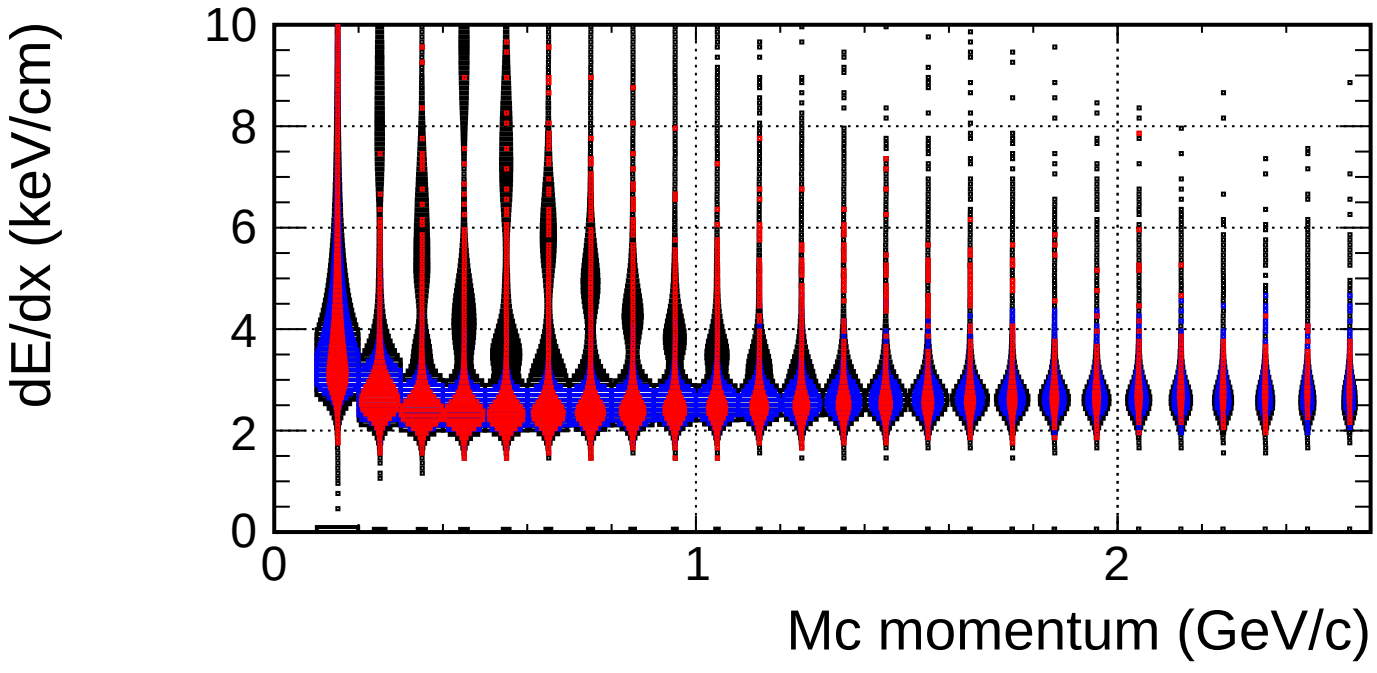




Daughter pi- (from kaon0mode0809) (CONTAM, geantid=9)

pi- (PRIMARY, $|n\sigma_{pi-}|<2$)

dE/dx vs momentum (Embedding:pi+, Real:pi+)

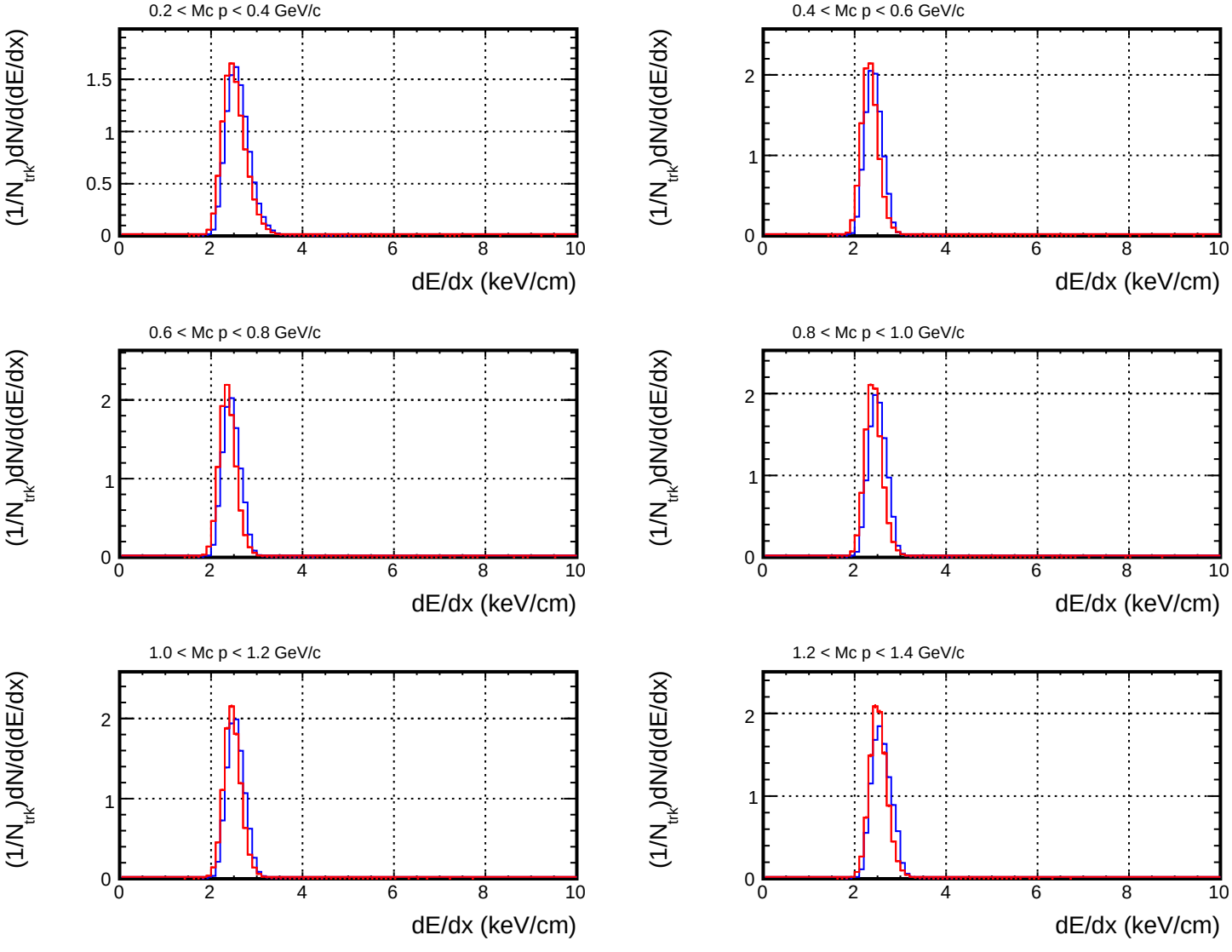


Daughter pi+ (from kaon0mode0809) (CONTAM, geantid=8)

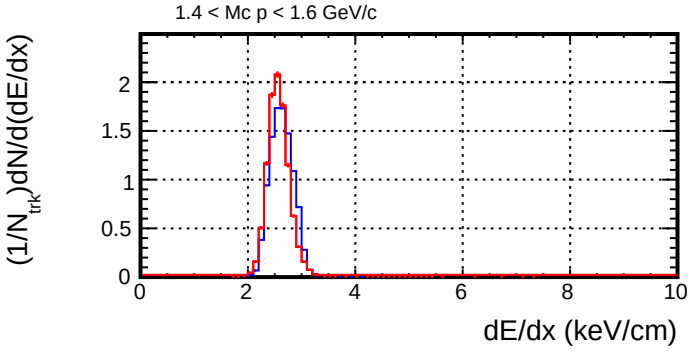
Real data

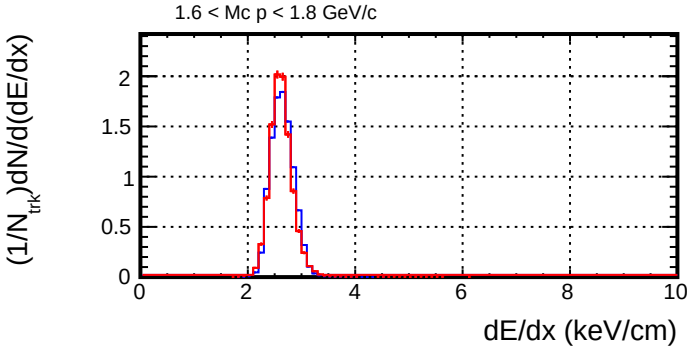
Real data with PID cut (σ<2)

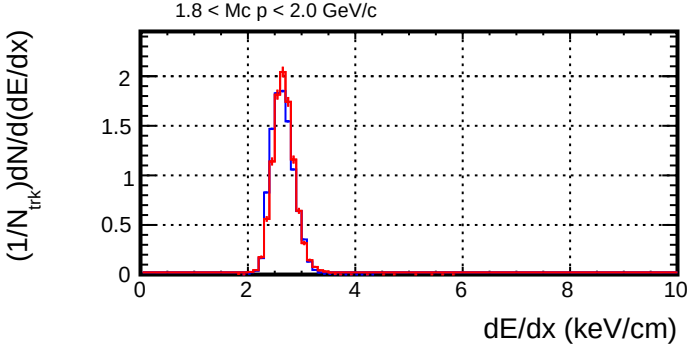
Projection of dE/dx for each p bin

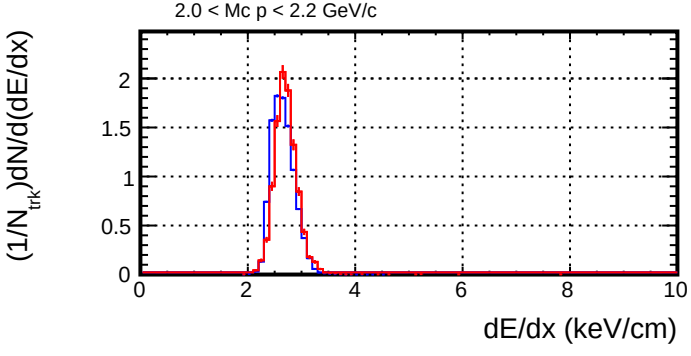


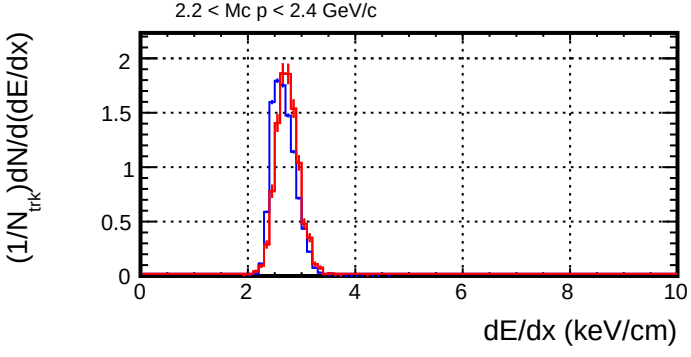
Projection of dE/dx for each p bin

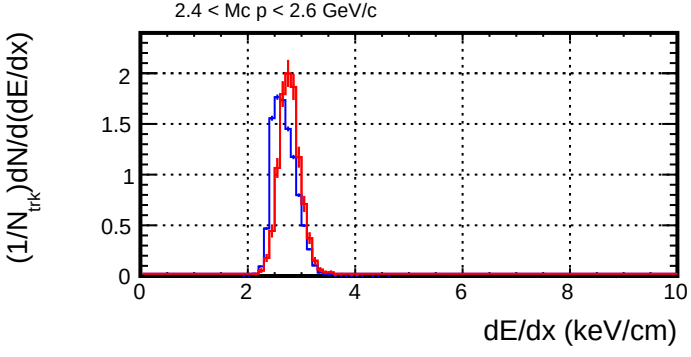








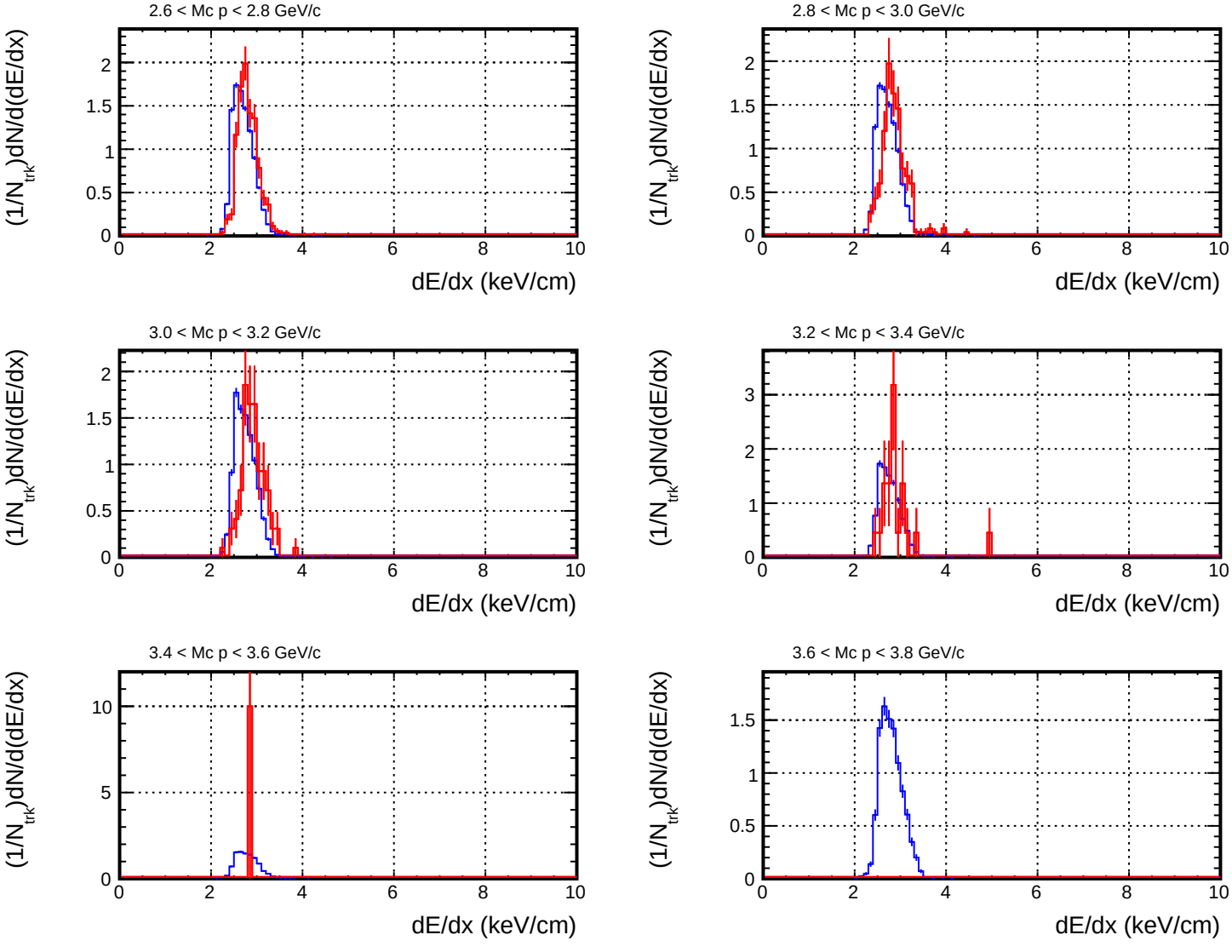




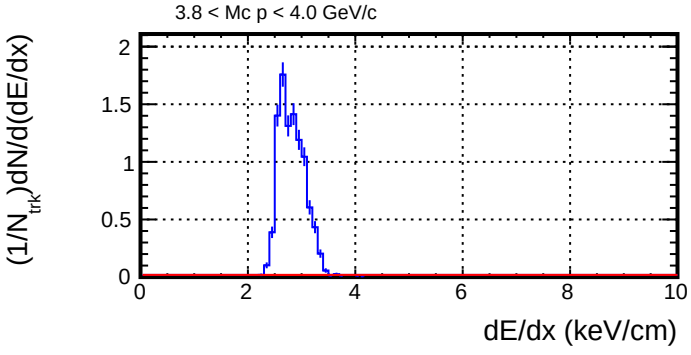
Daughter pi+ (from kaon0mode0809)
(CONTAM, geantid=8)

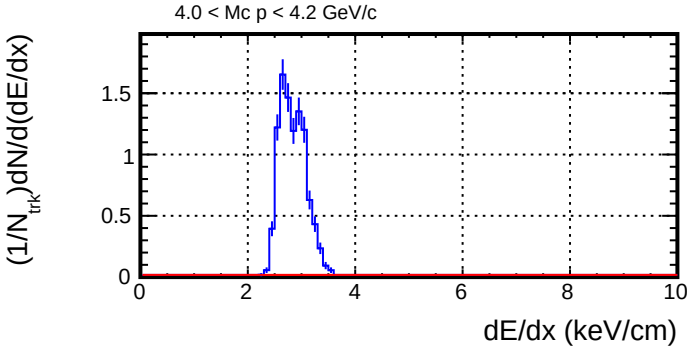
pi+
(PRIMARY, $|n\sigma_{pi+}|<2$)

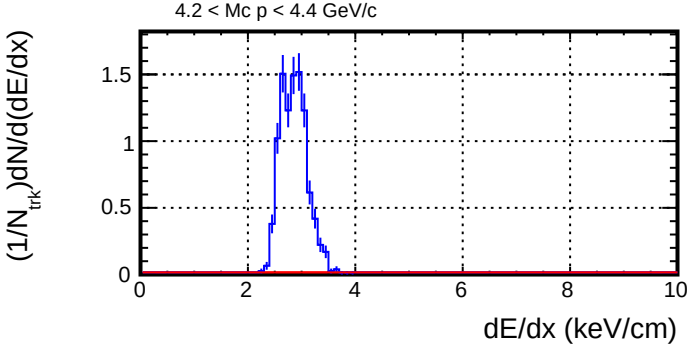
Projection of dE/dx for each p bin

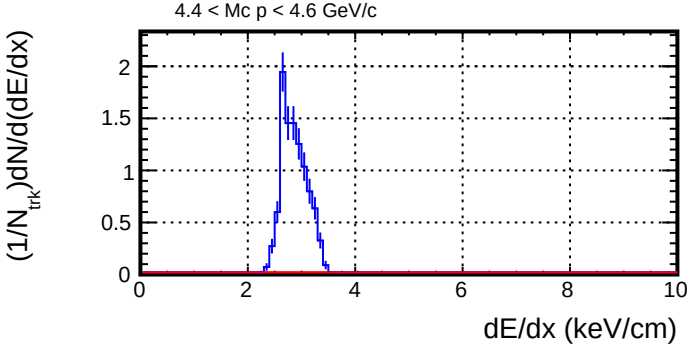


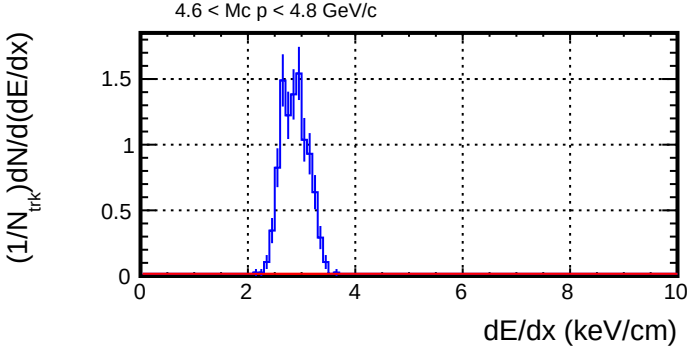
Projection of dE/dx for each p bin

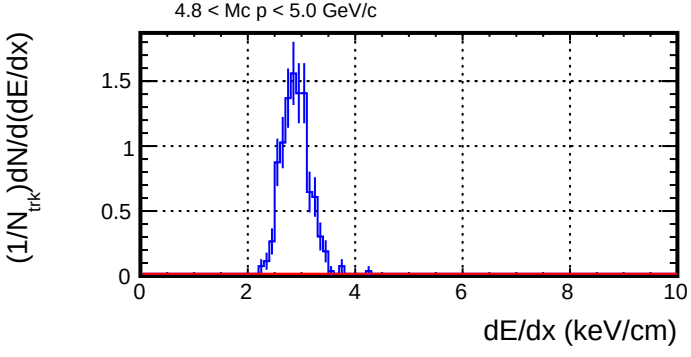








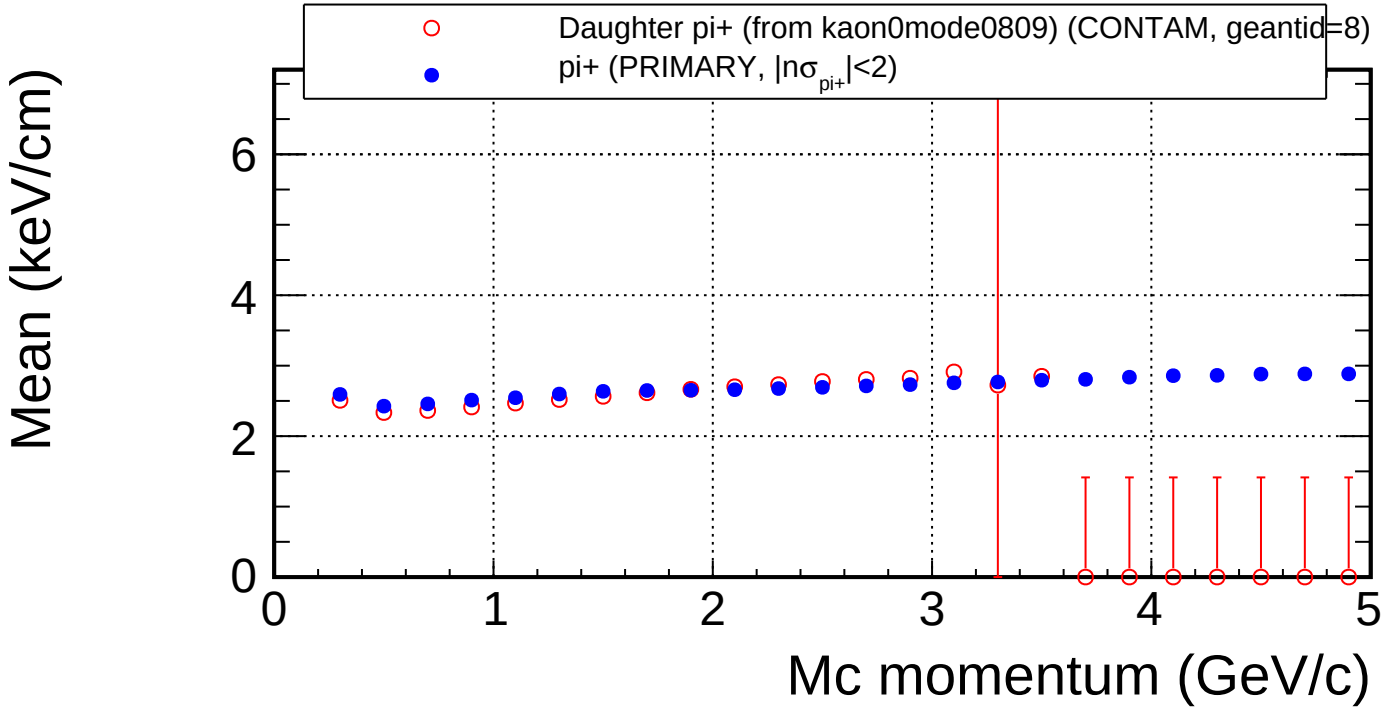


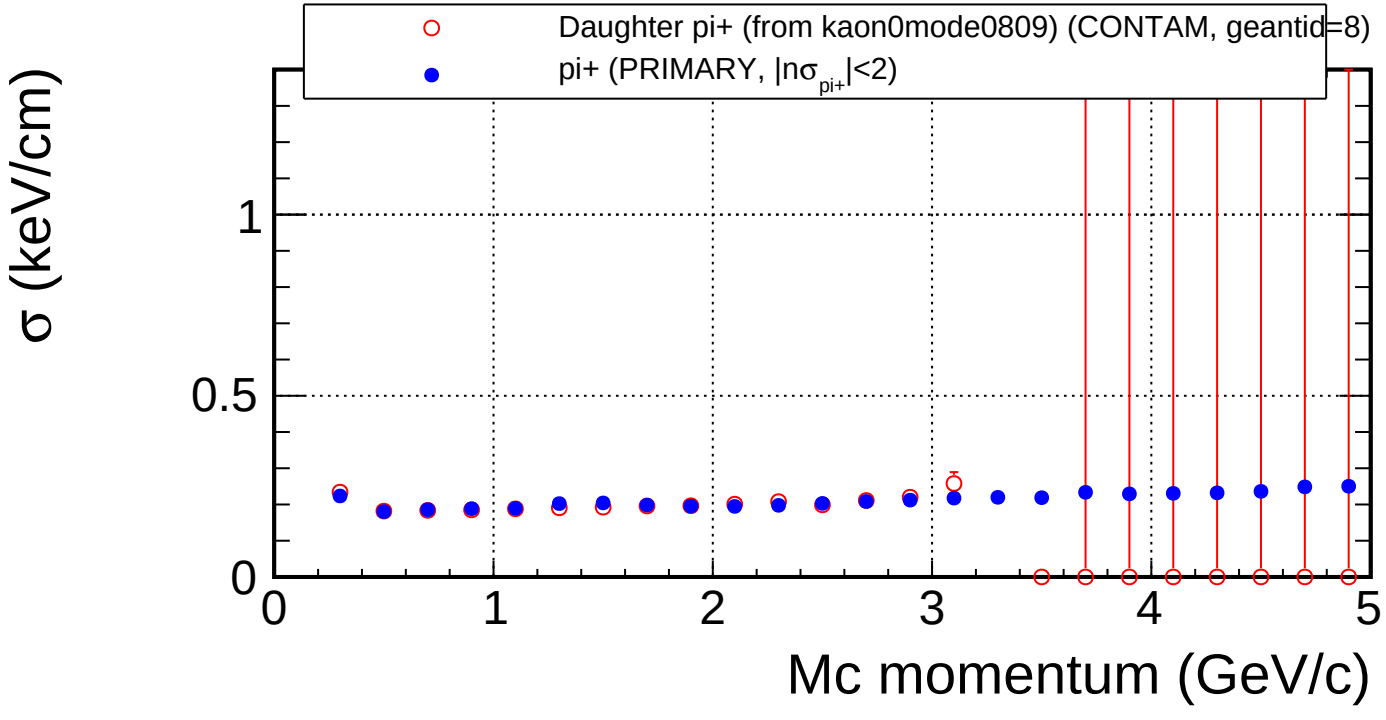


Daughter pi+ (from kaon0mode0809)
(CONTAM, geantid=8)

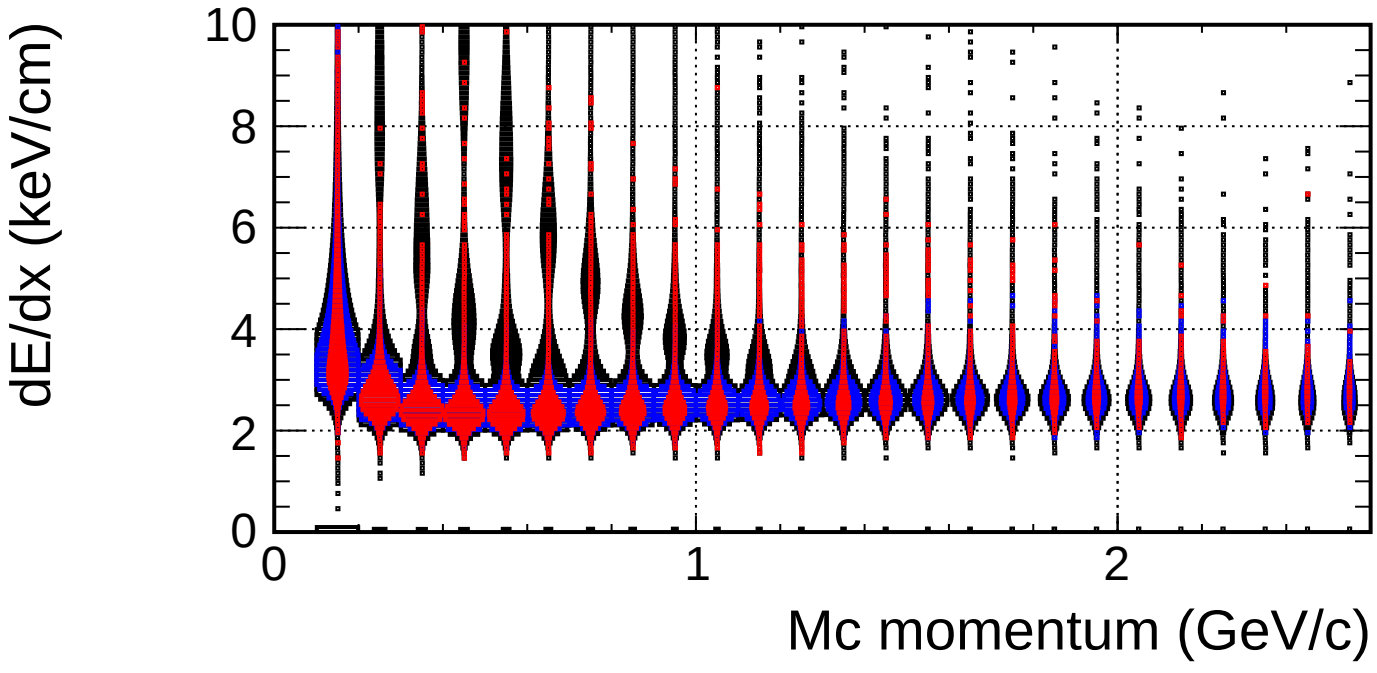
pi+
(PRIMARY, $|n\sigma_{pi+}|<2$)

Mean/σ of dE/dx vs momentum





dE/dx vs momentum (Embedding:pi-, Real:pi-)

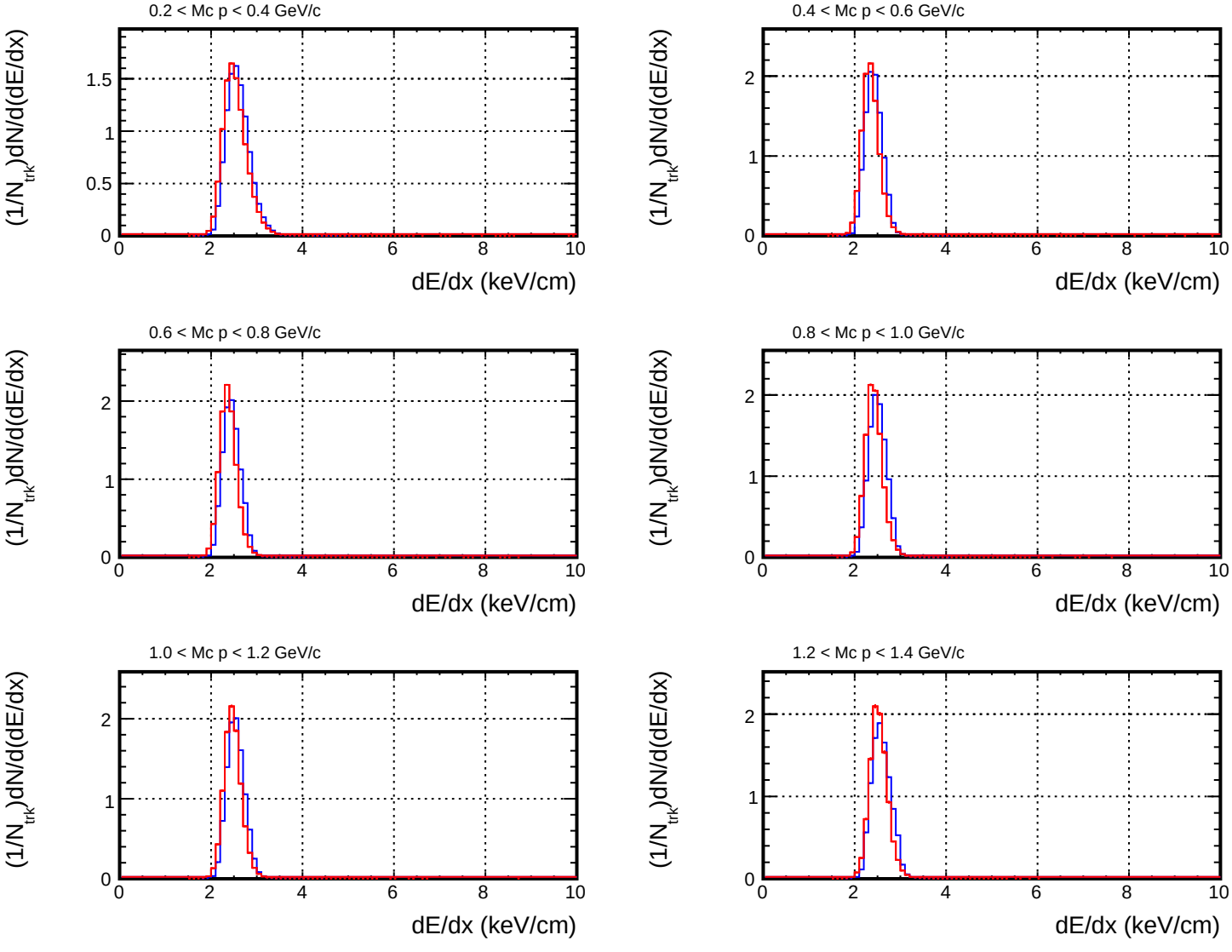


Daughter pi- (from kaon0mode0809) (CONTAM, geantid=9)

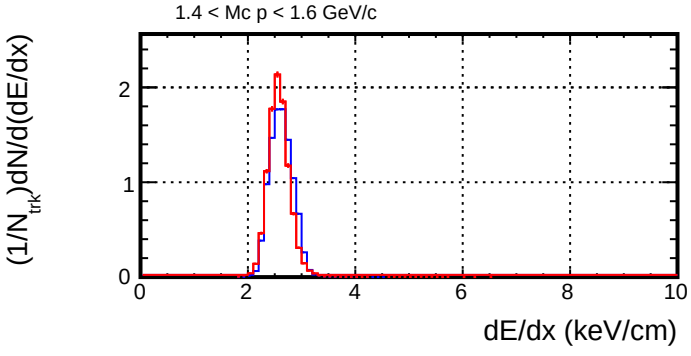
Real data

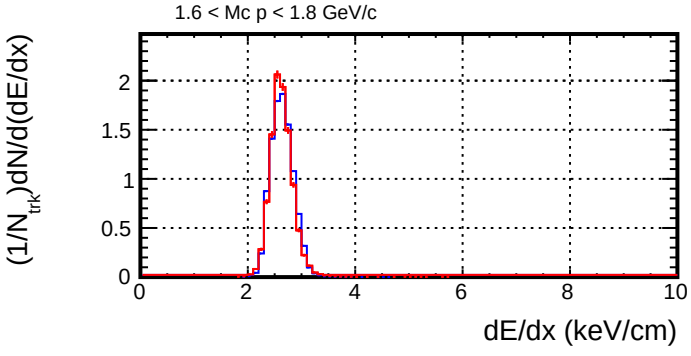
Real data with PID cut (σ<2)

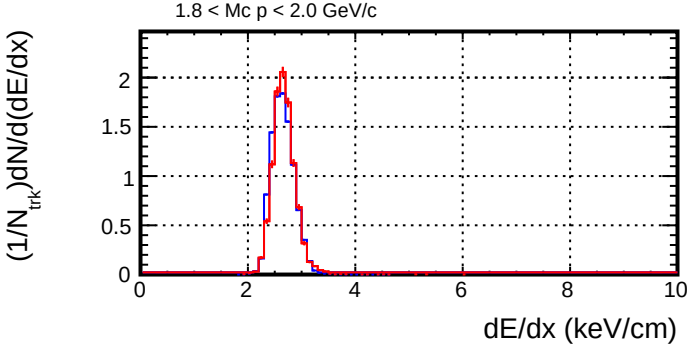
Projection of dE/dx for each p bin

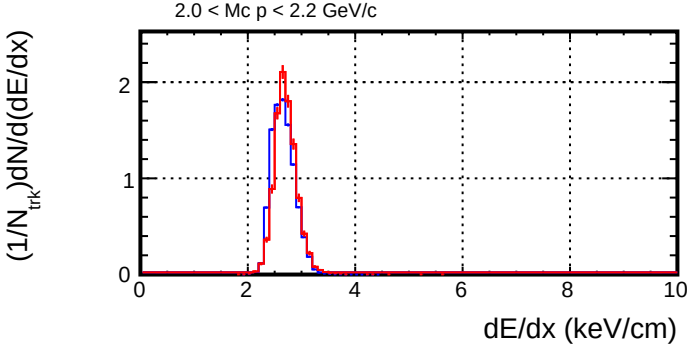


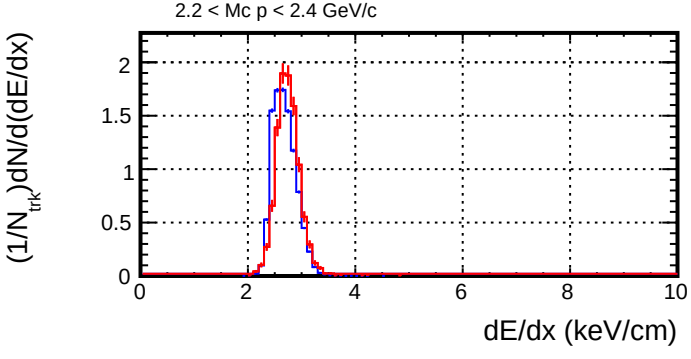
Projection of dE/dx for each p bin

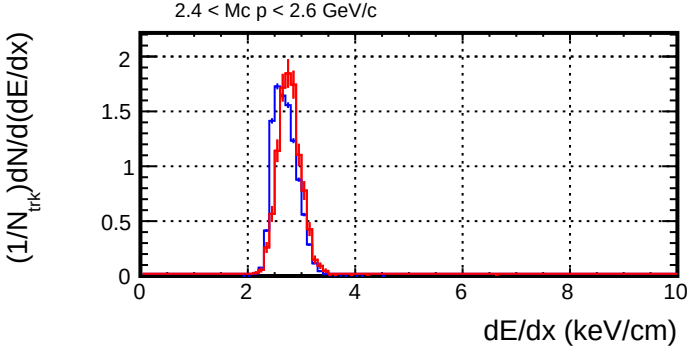








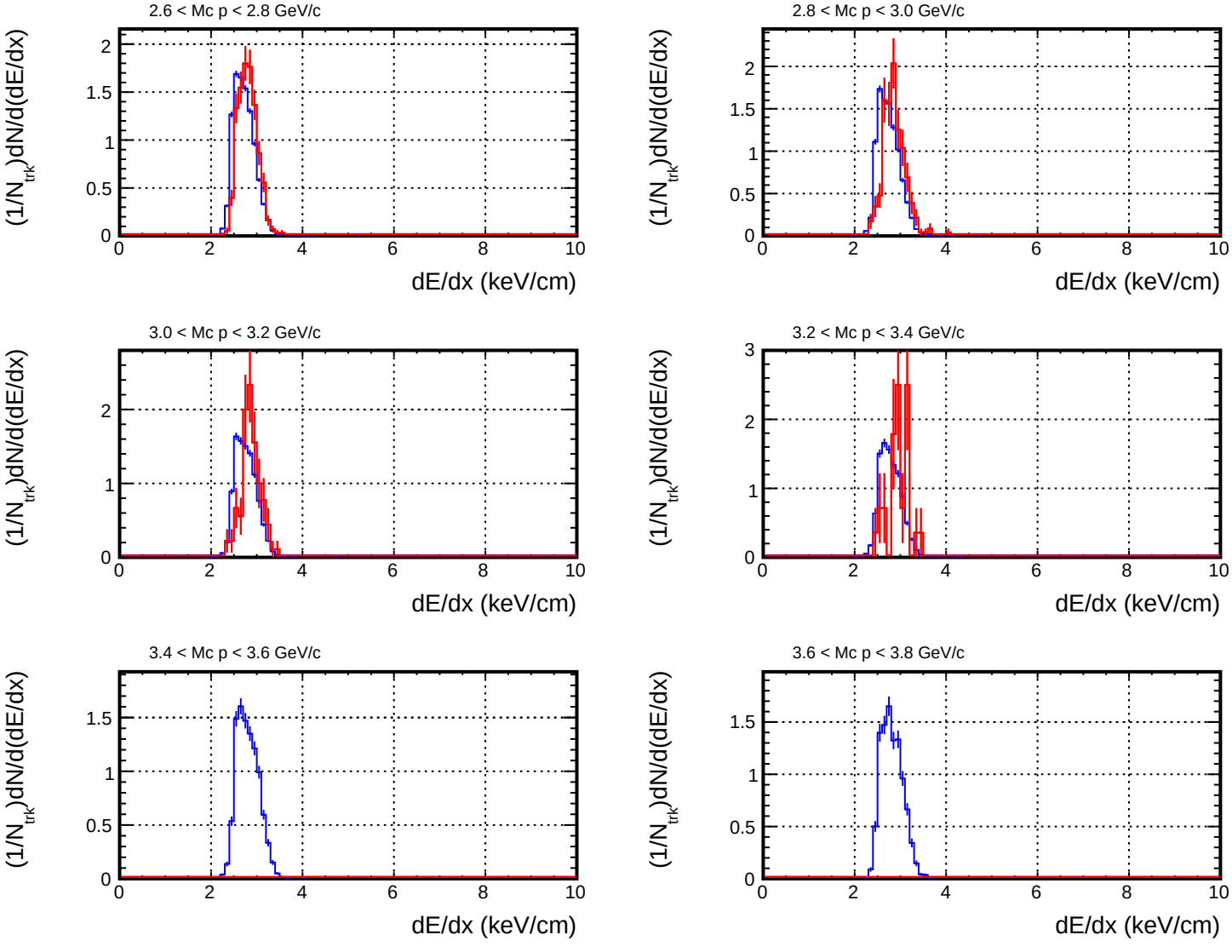




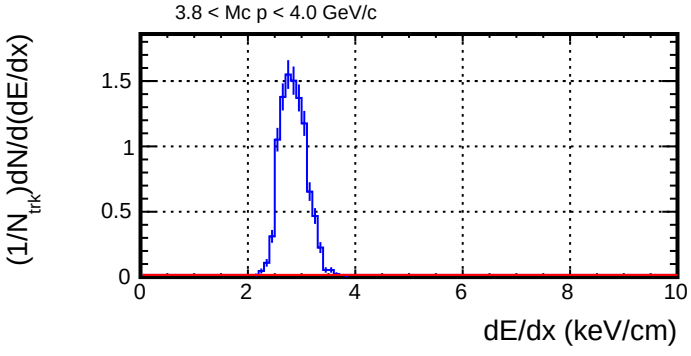
Daughter pi- (from kaon0mode0809)
(CONTAM, geantid=9)

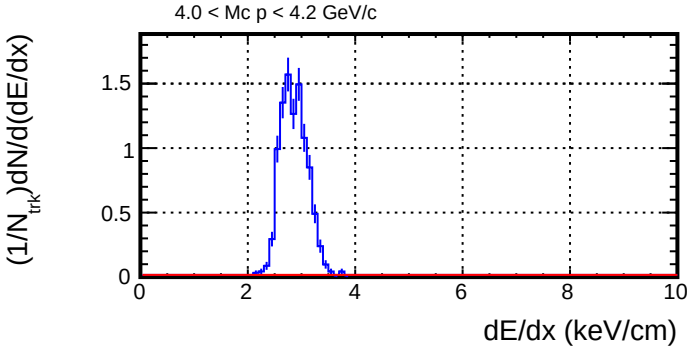
pi-
(PRIMARY, $|n\sigma_{pi-}|<2$)

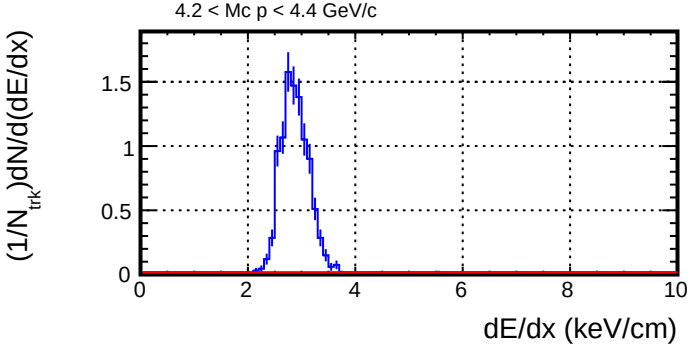
Projection of dE/dx for each p bin

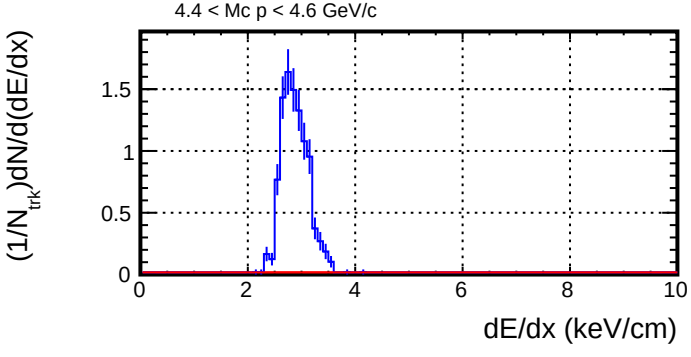


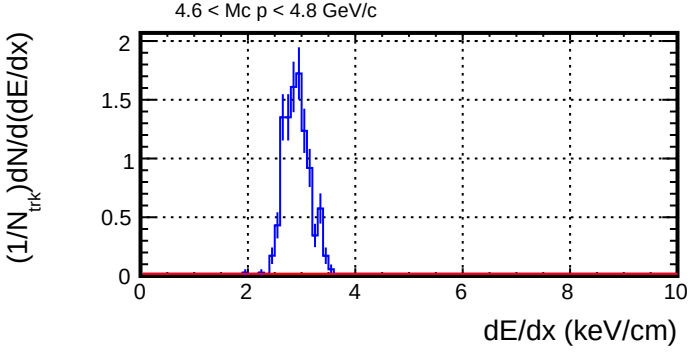
Projection of dE/dx for each p bin

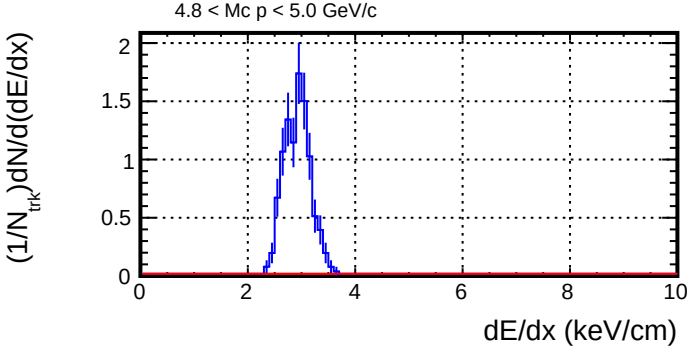








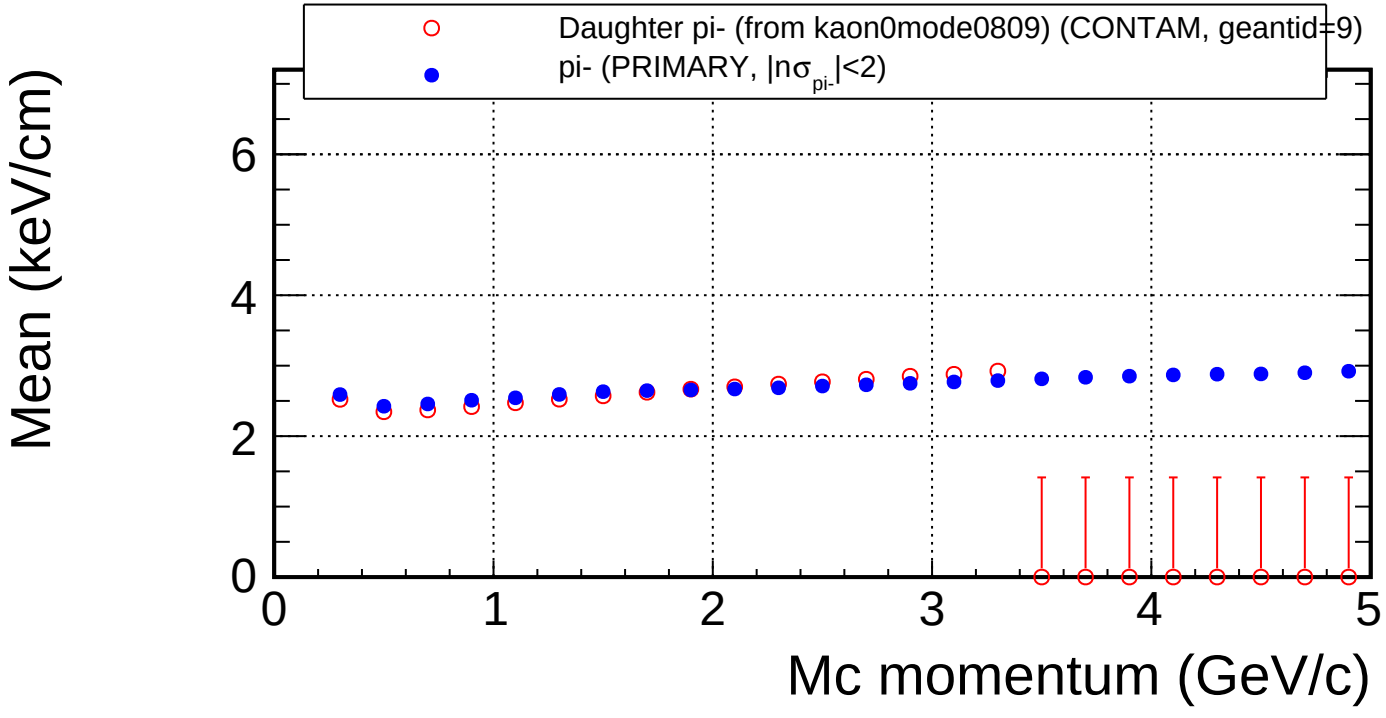


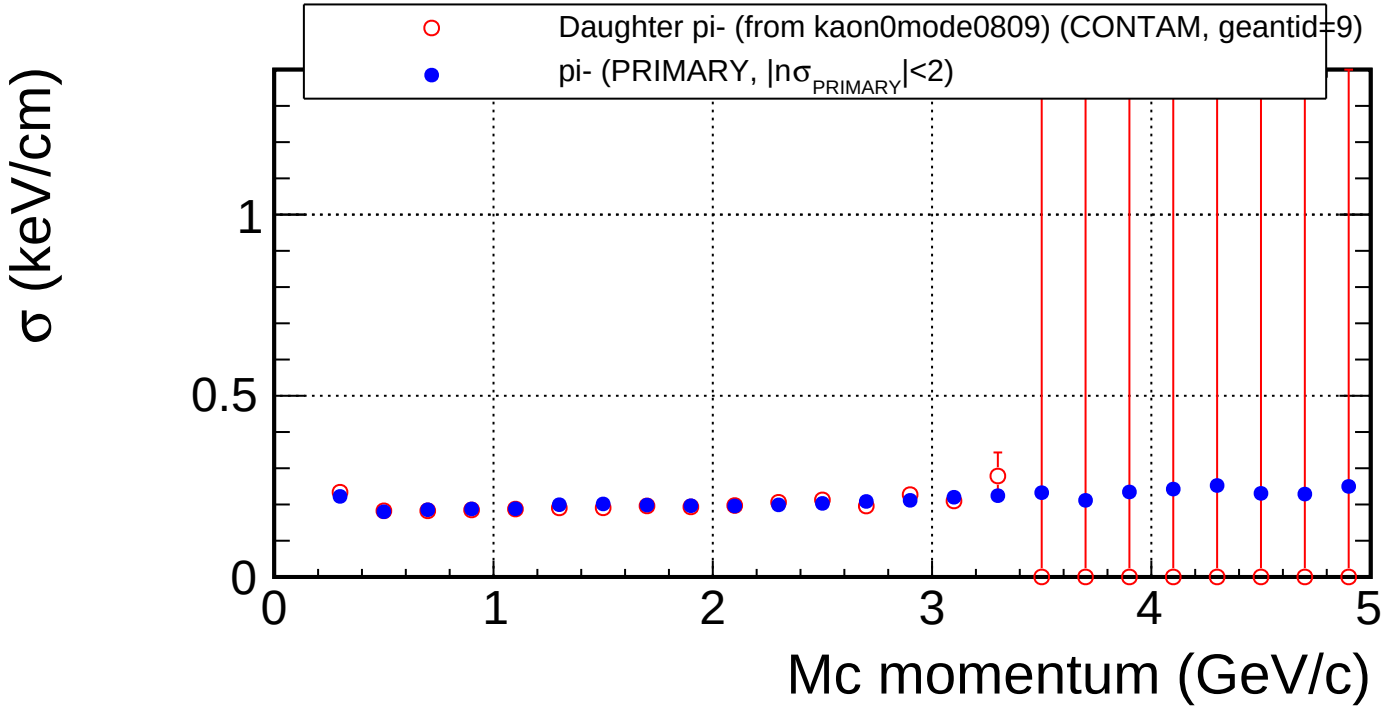


Daughter pi- (from kaon0mode0809)
(CONTAM, geantid=9)

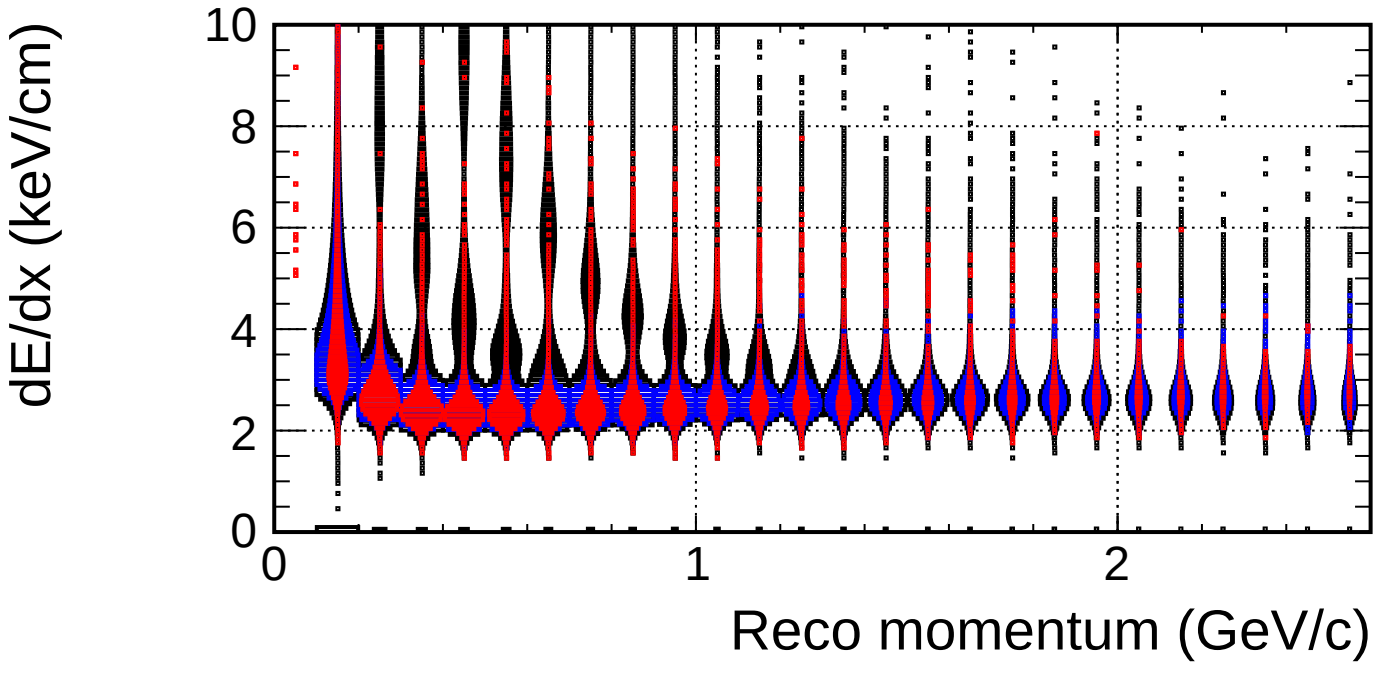
pi-
(PRIMARY, $|n\sigma_{pi-}|<2$)

Mean/σ of dE/dx vs momentum





dE/dx vs momentum (Embedding:pi+, Real:pi+)

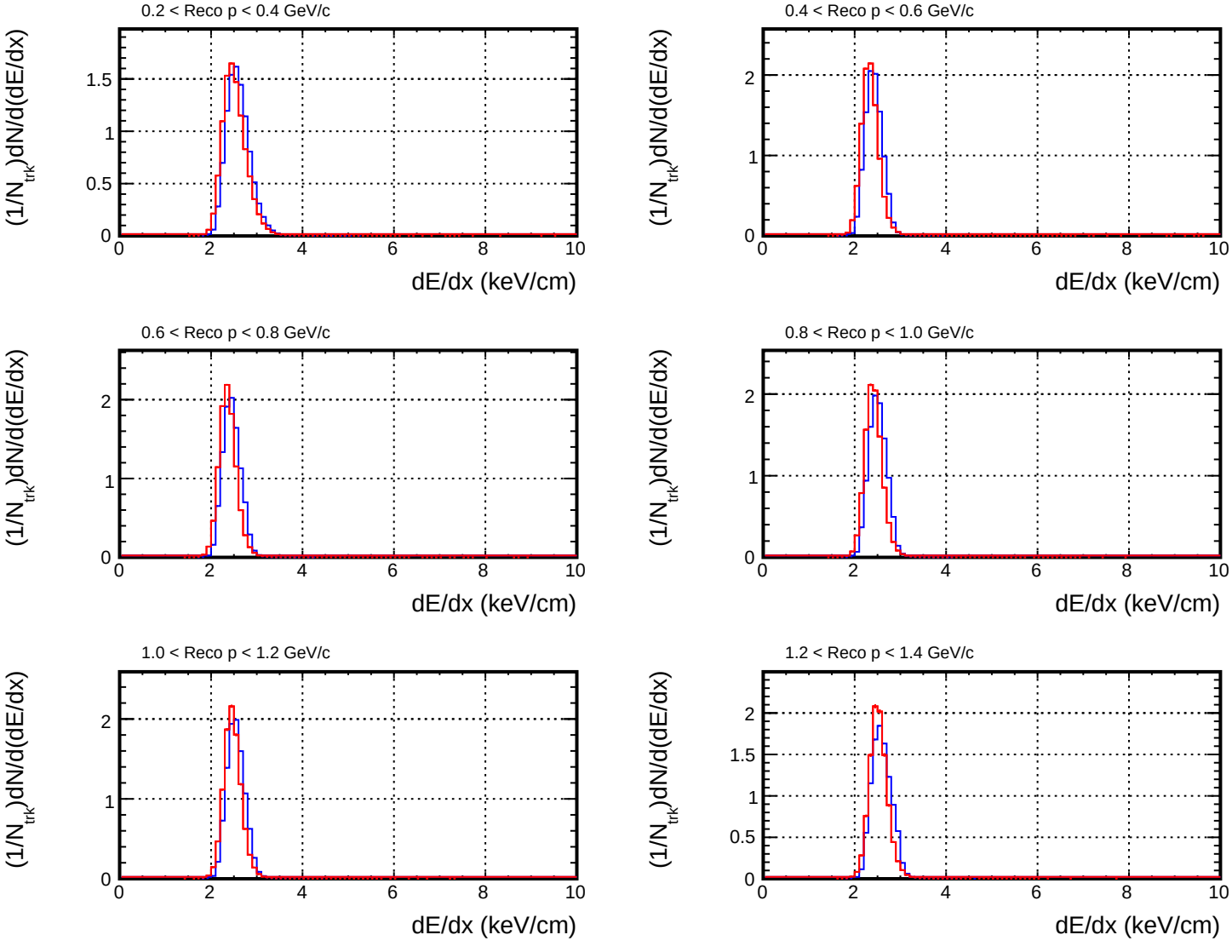


Daughter pi+ (from kaon0mode0809) (CONTAM, geantid=8)

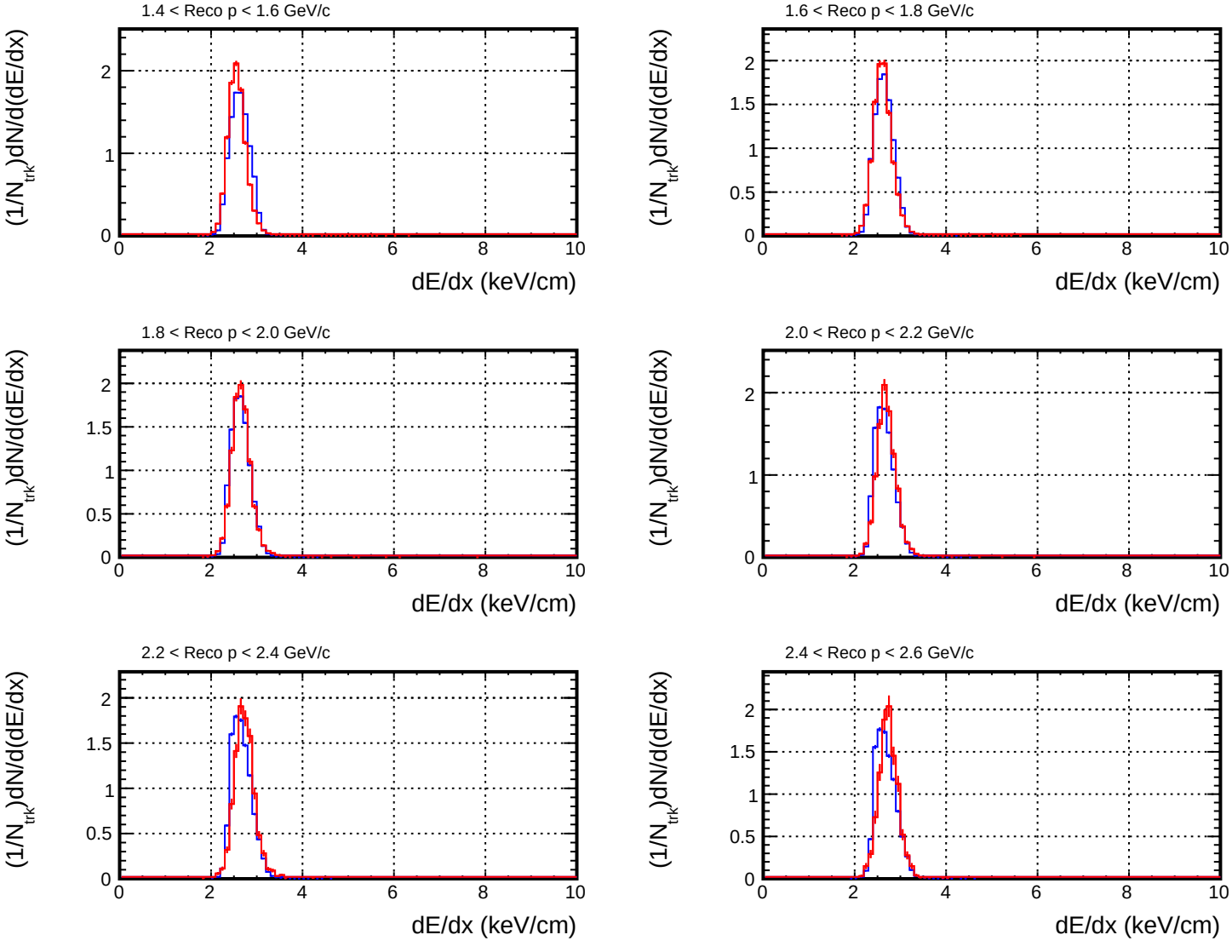
Real data

Real data with PID cut (σ<2)

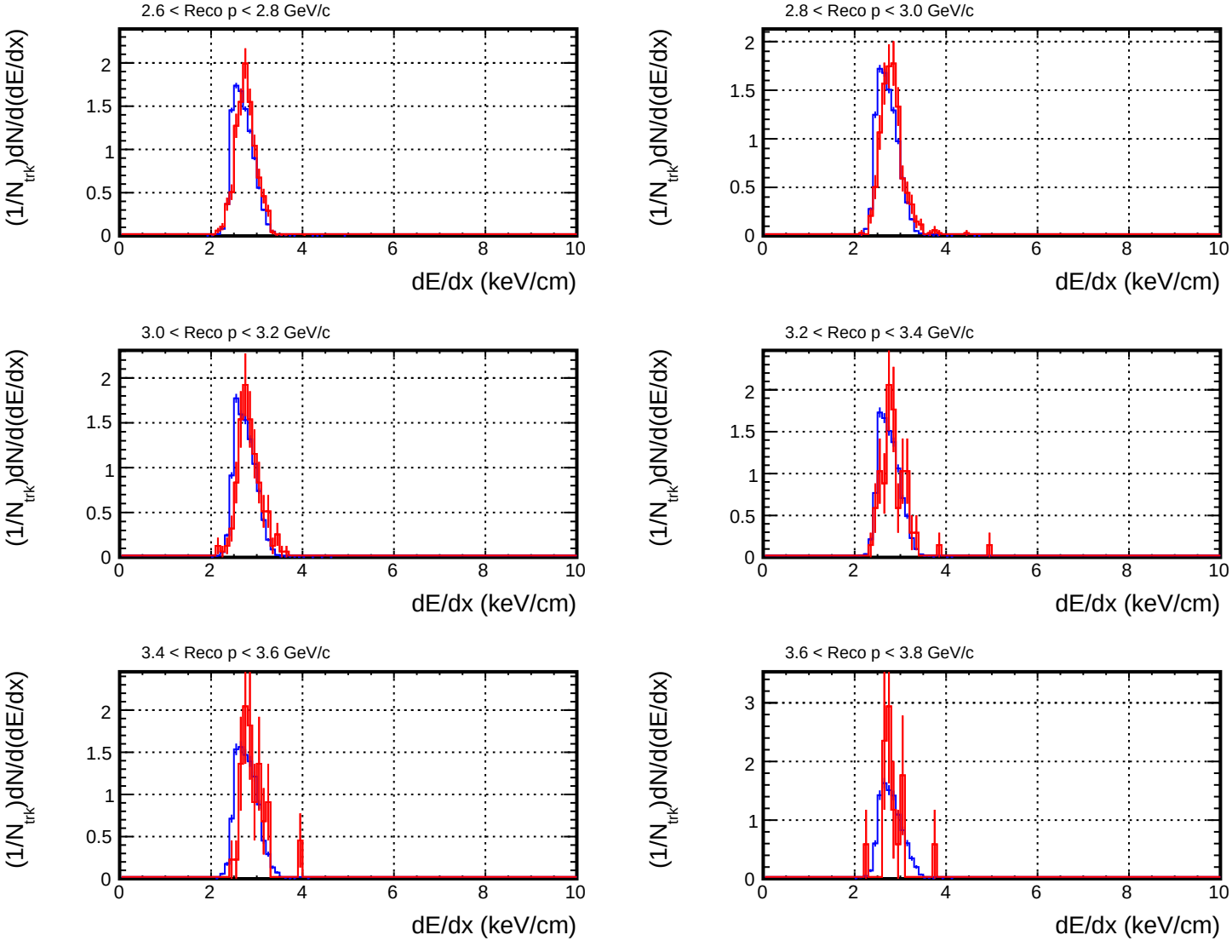
Projection of dE/dx for each p bin



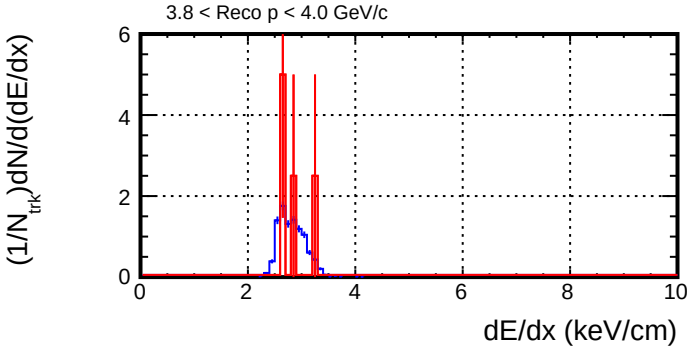
Projection of dE/dx for each p bin

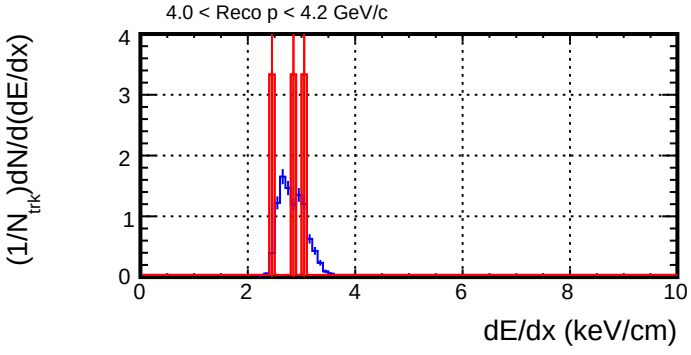


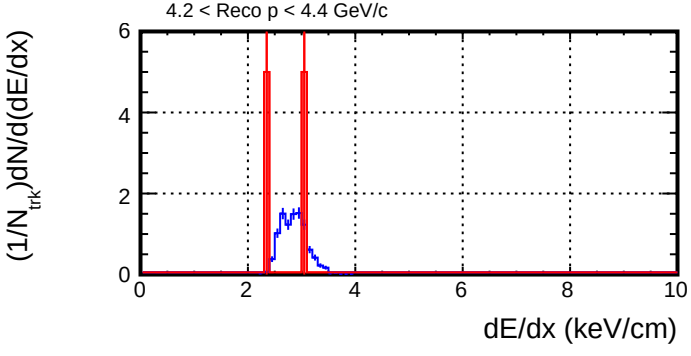
Projection of dE/dx for each p bin

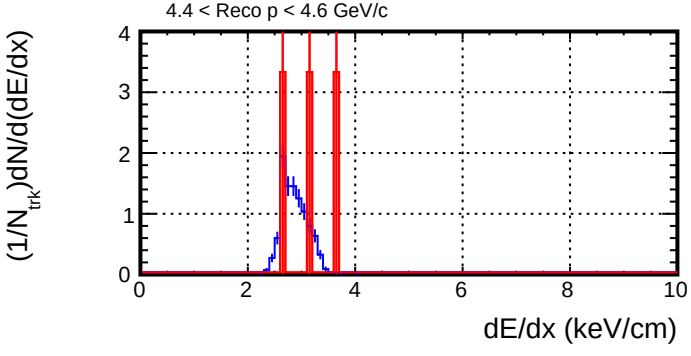


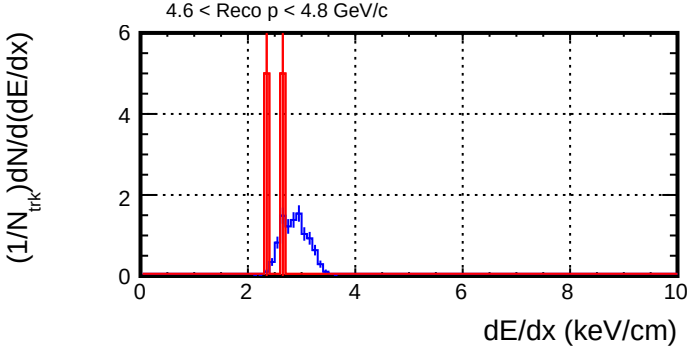
Projection of dE/dx for each p bin

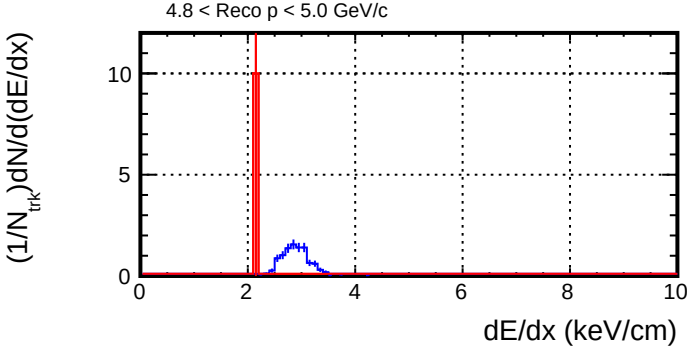








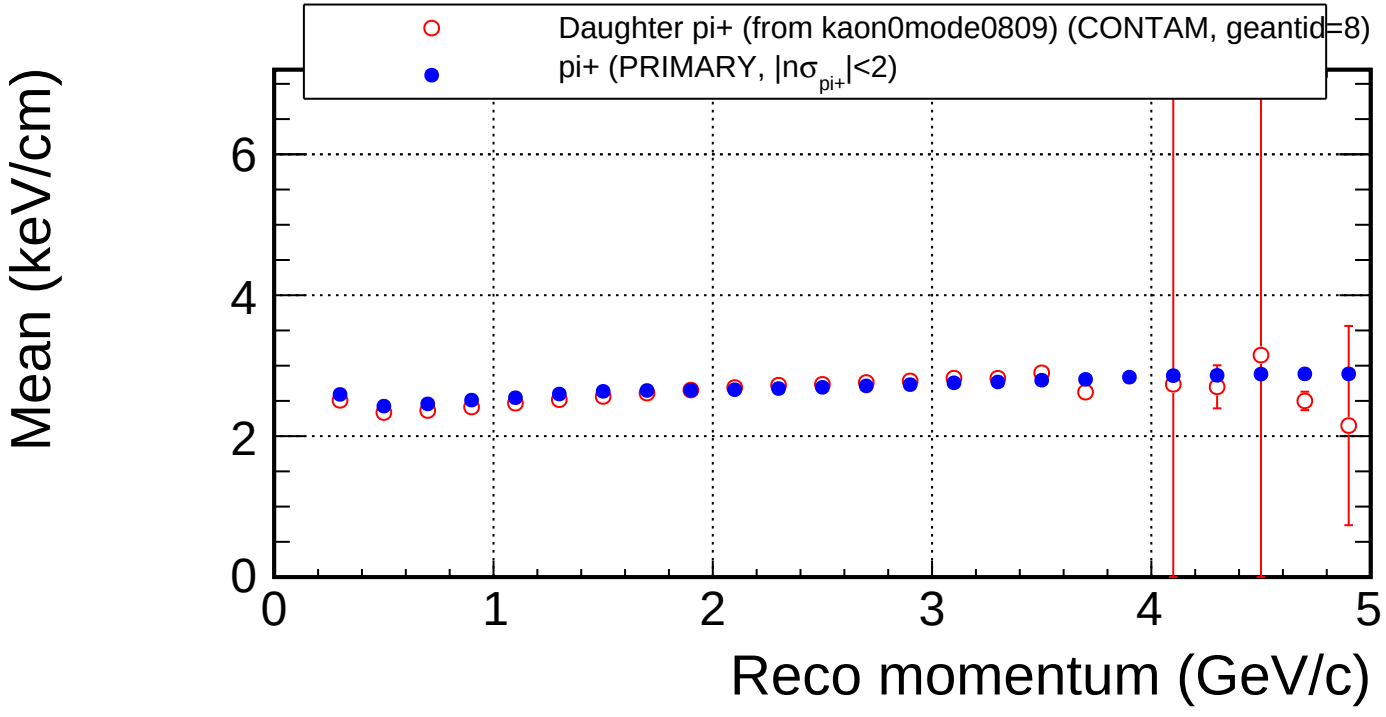


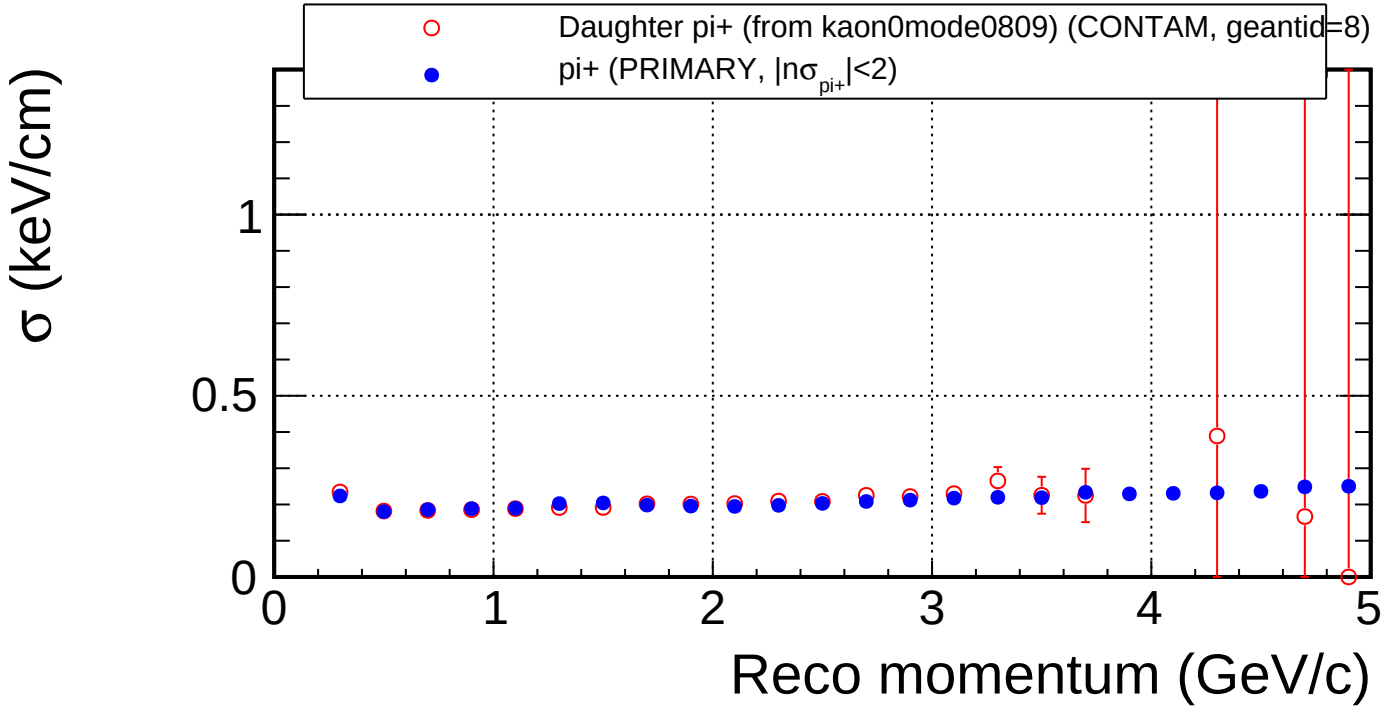


Daughter pi+ (from kaon0mode0809)
(CONTAM, geantid=8)

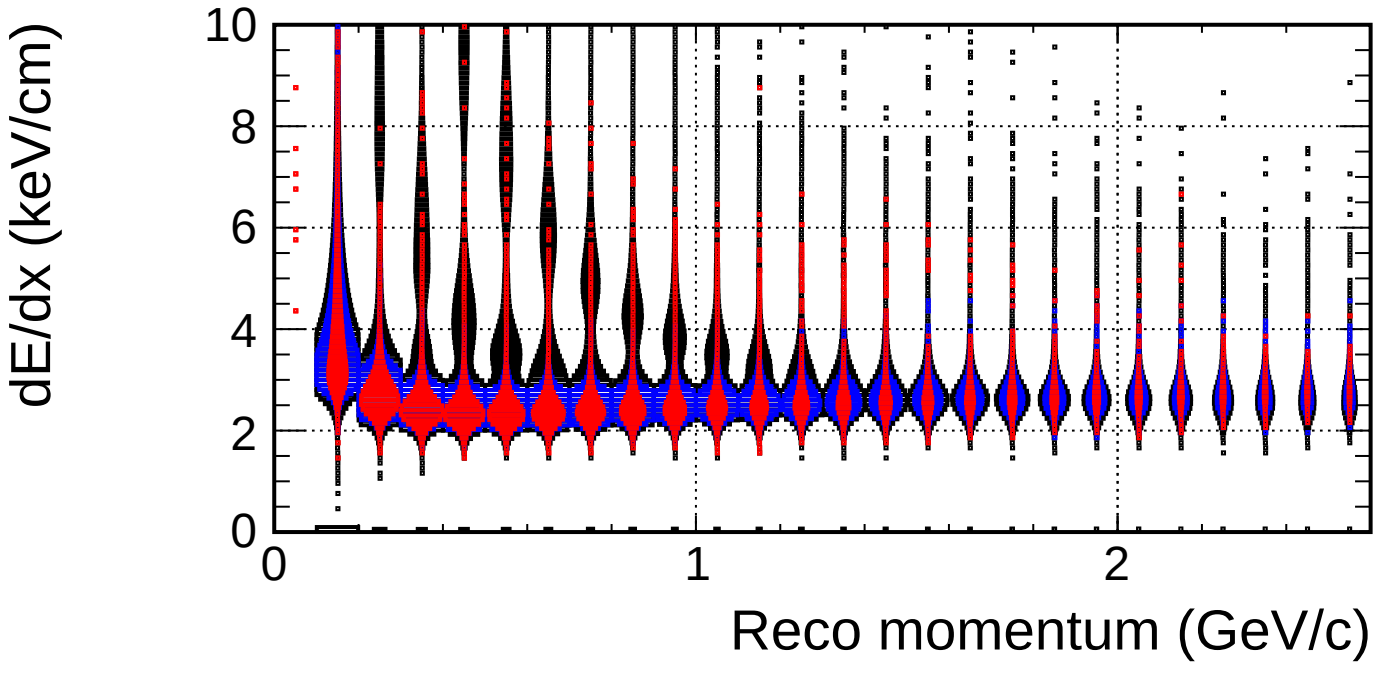
pi+
(PRIMARY, $|n\sigma_{pi+}|<2$)

Mean/σ of dE/dx vs momentum





dE/dx vs momentum (Embedding:pi-, Real:pi-)

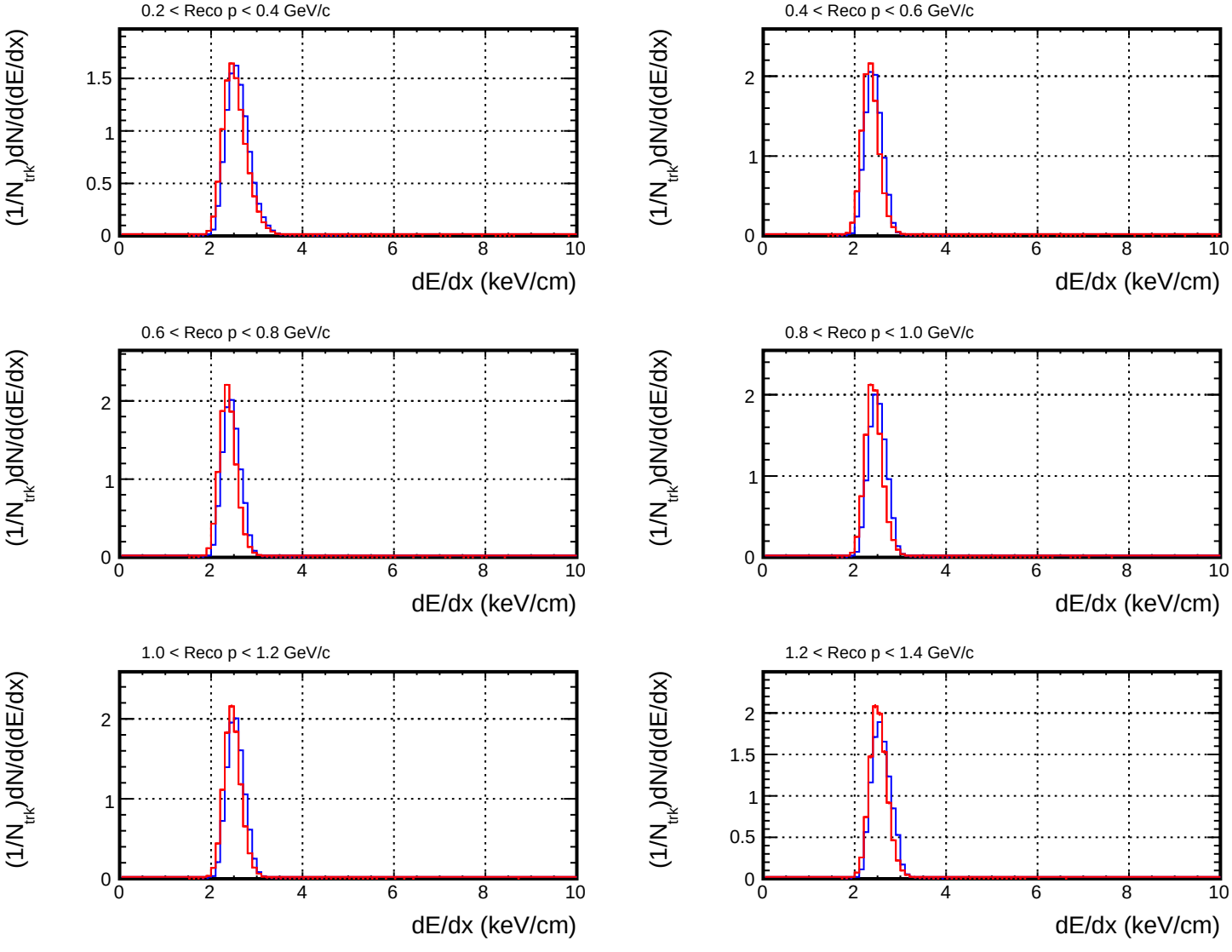


Daughter pi- (from kaon0mode0809) (CONTAM, geantid=9)

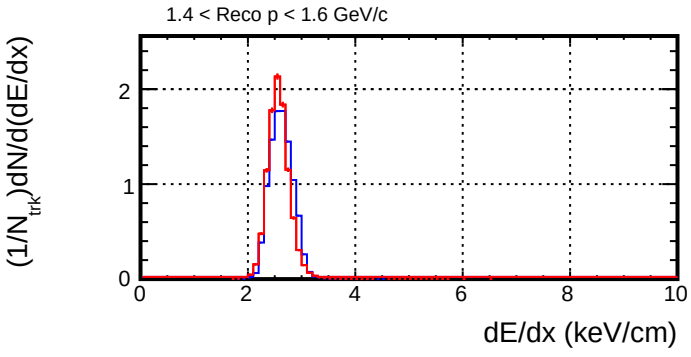
Real data

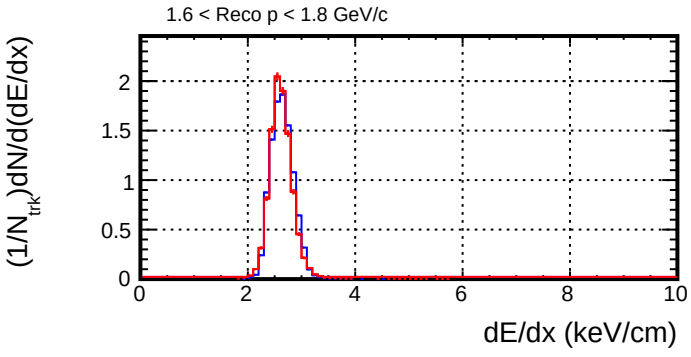
Real data with PID cut (σ<2)

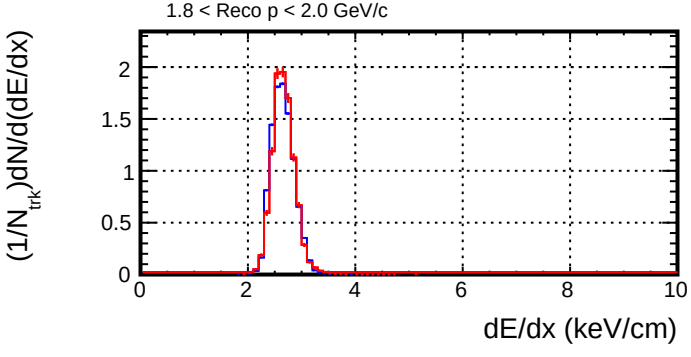
Projection of dE/dx for each p bin

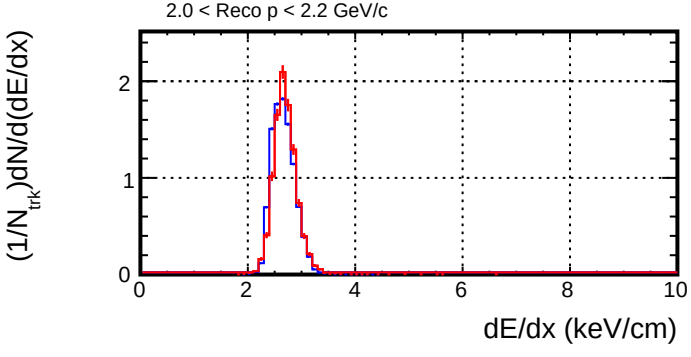


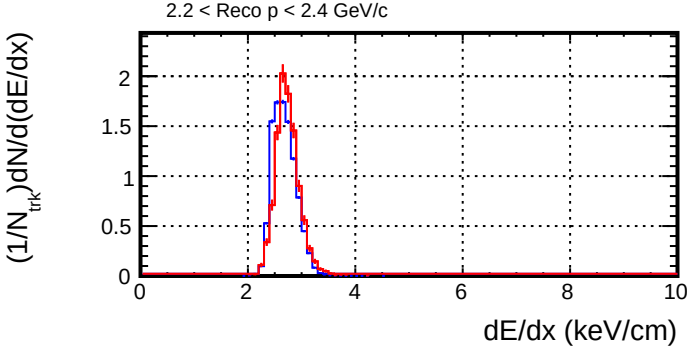
Projection of dE/dx for each p bin

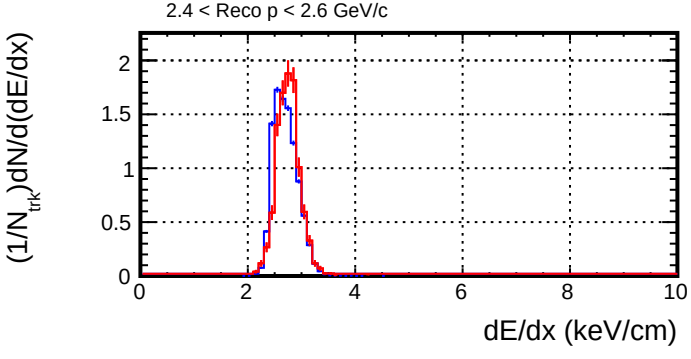








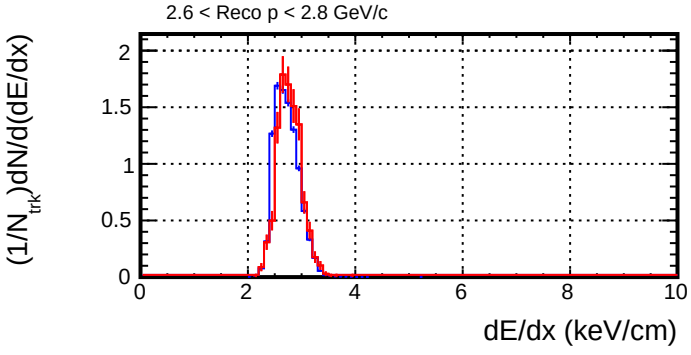


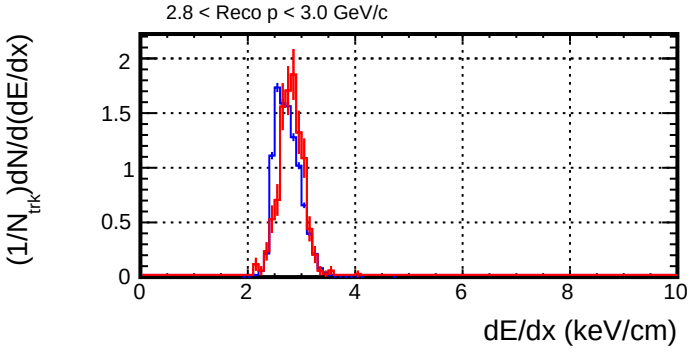


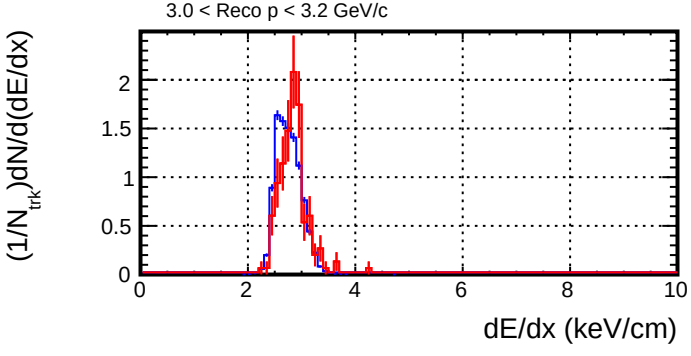
Daughter pi- (from kaon0mode0809)
(CONTAM, geantid=9)

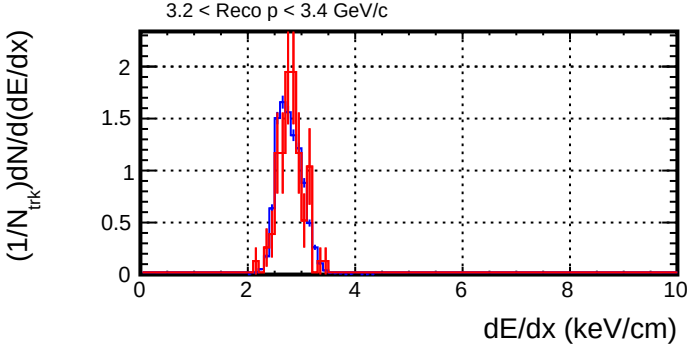
pi-
(PRIMARY, $|n\sigma_{pi-}|<2$)

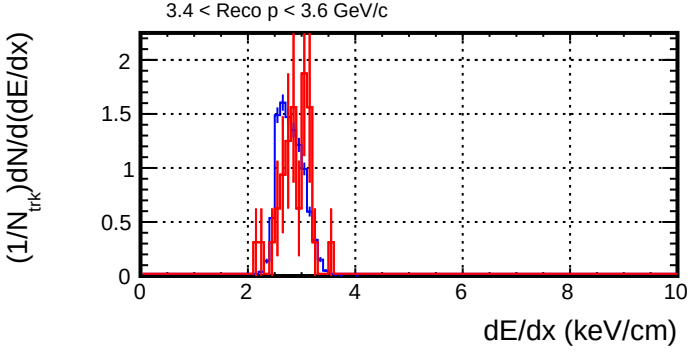
Projection of dE/dx for each p bin

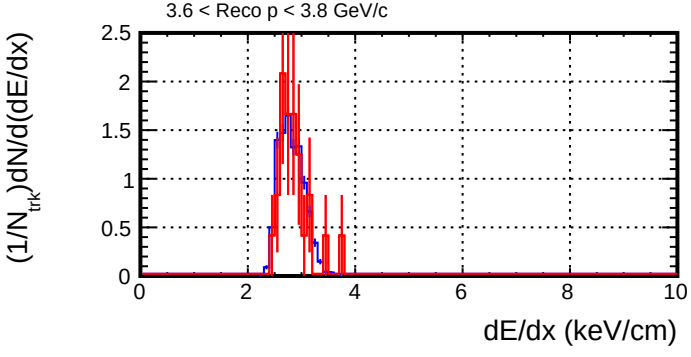








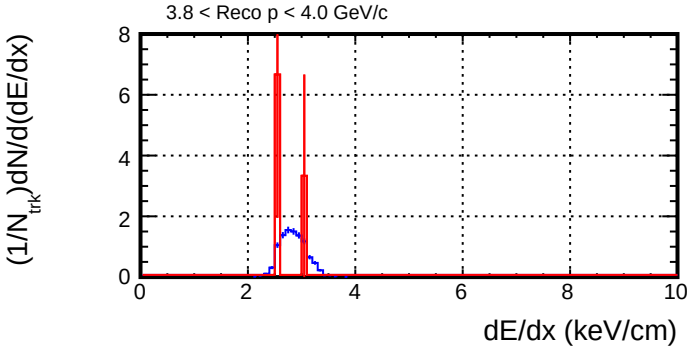


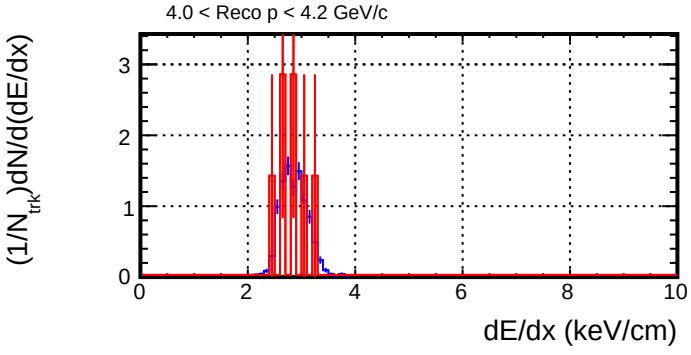


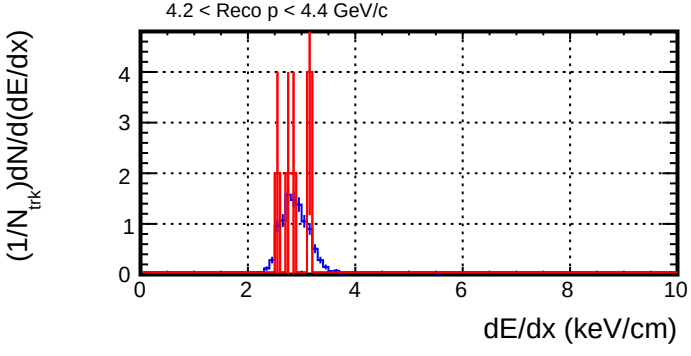
Daughter pi- (from kaon0mode0809)
(CONTAM, geantid=9)

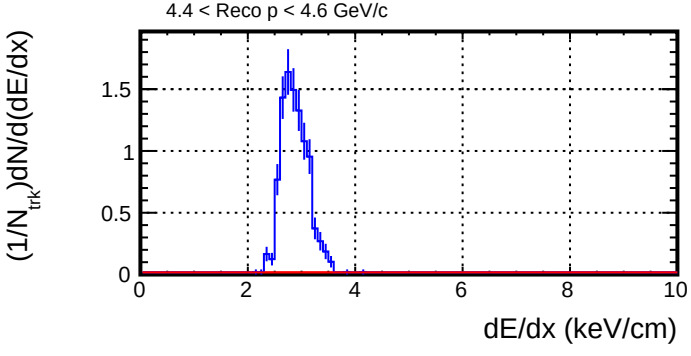
pi-
(PRIMARY, $|n\sigma_{pi-}|<2$)

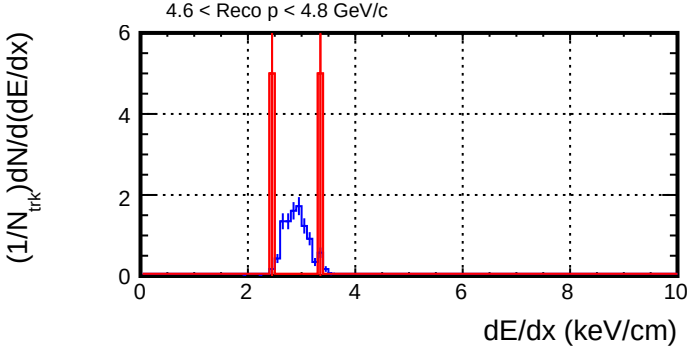
Projection of dE/dx for each p bin

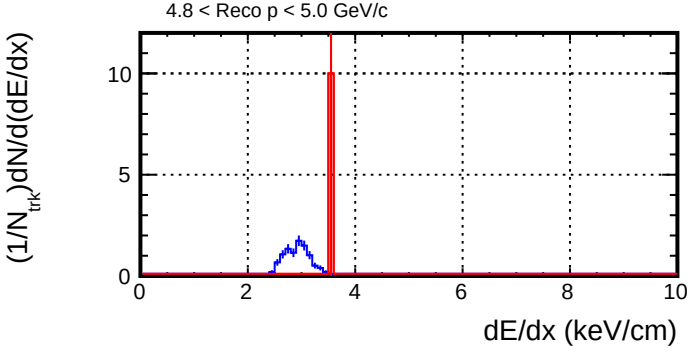








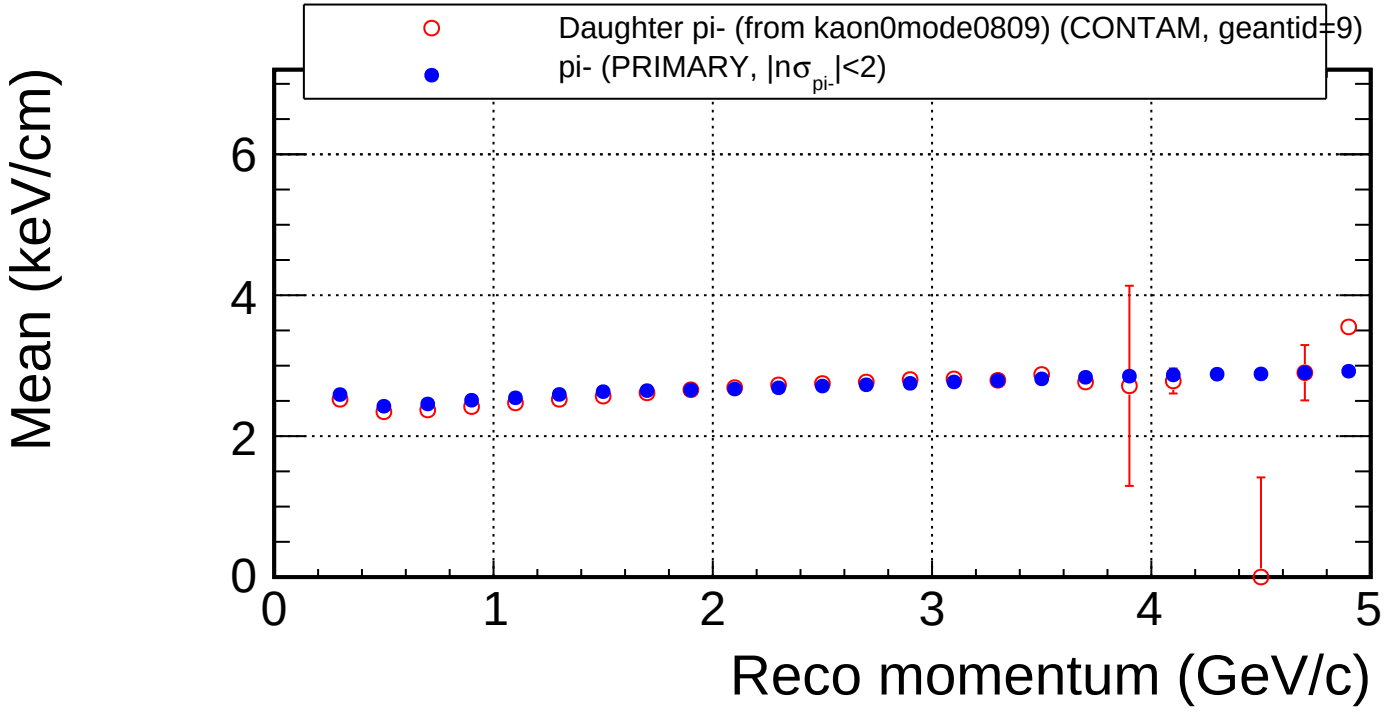


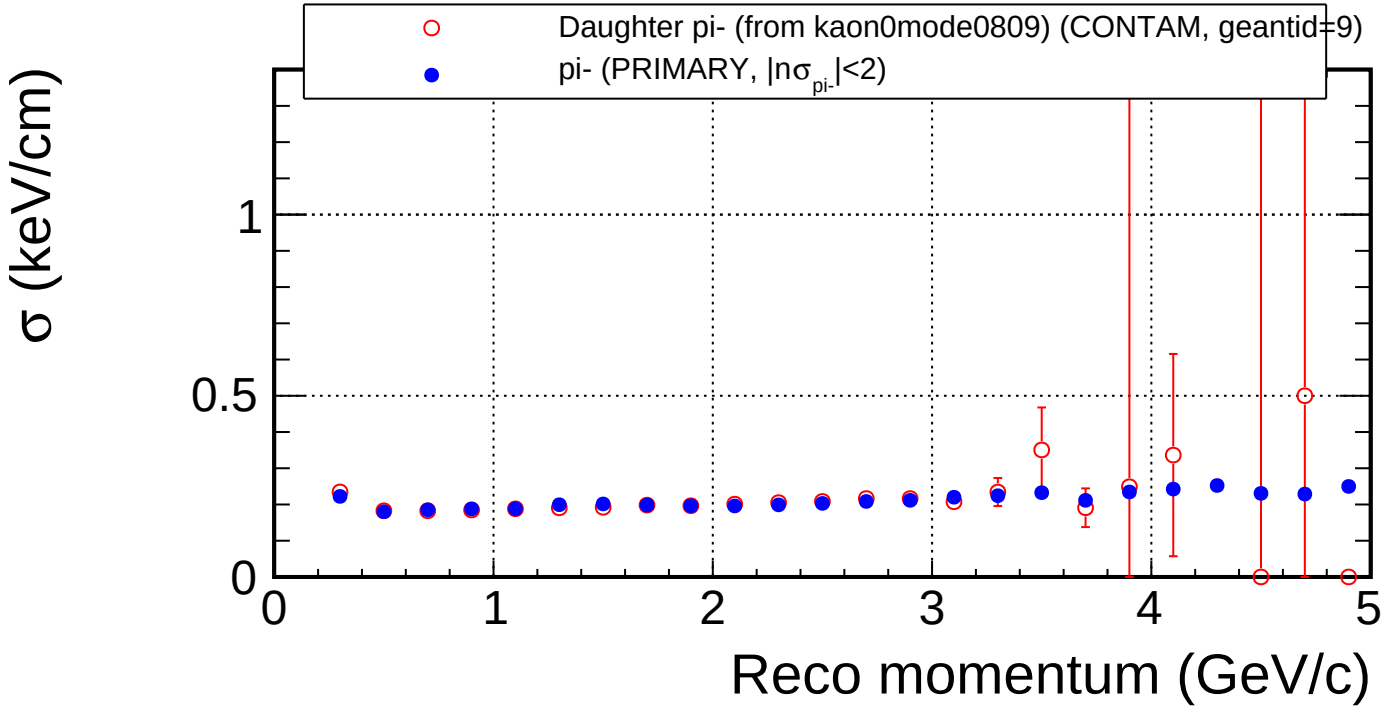


Daughter pi- (from kaon0mode0809)
(CONTAM, geantid=9)

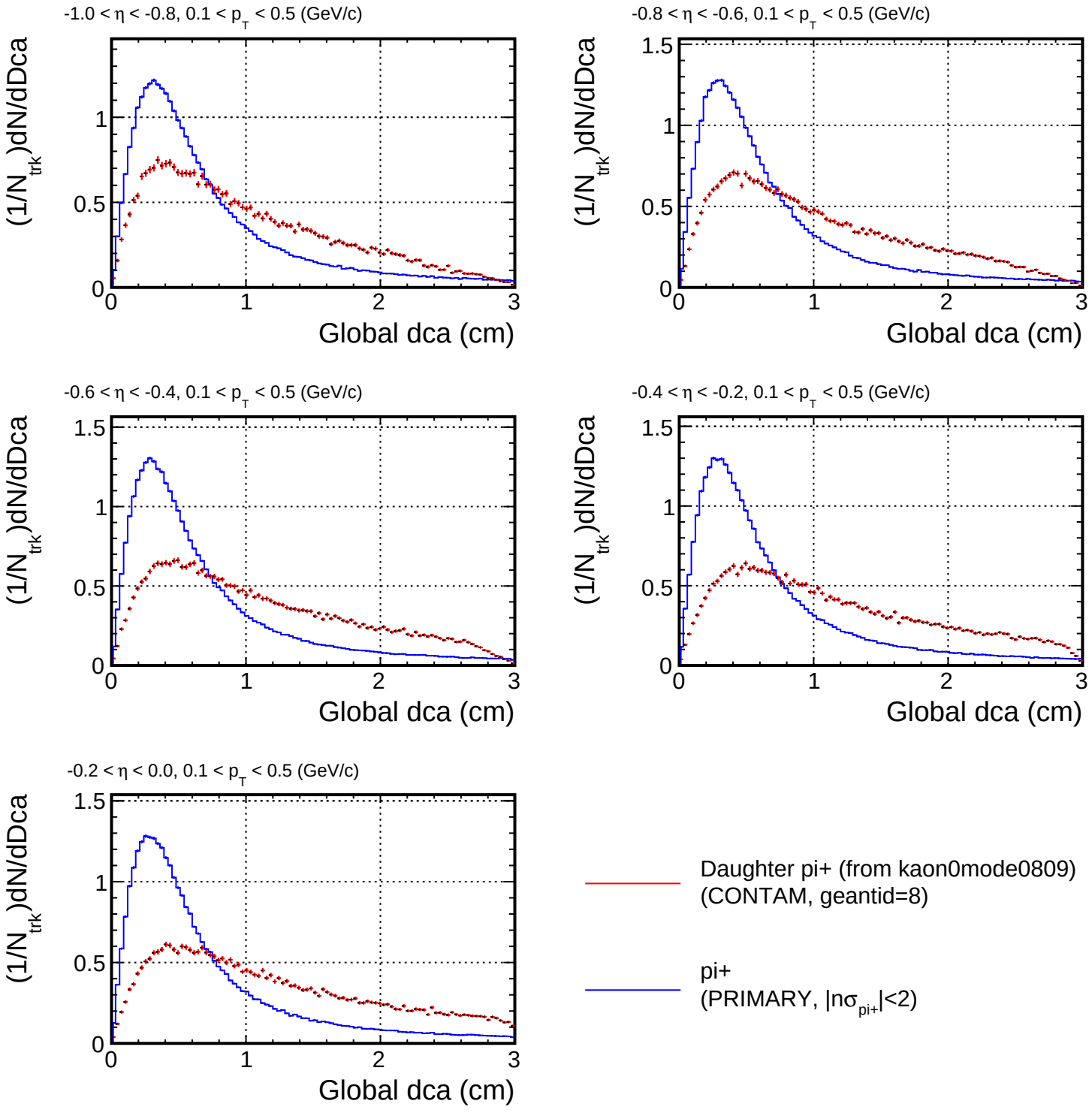
pi-
(PRIMARY, $|n\sigma_{pi-}|<2$)

Mean/σ of dE/dx vs momentum

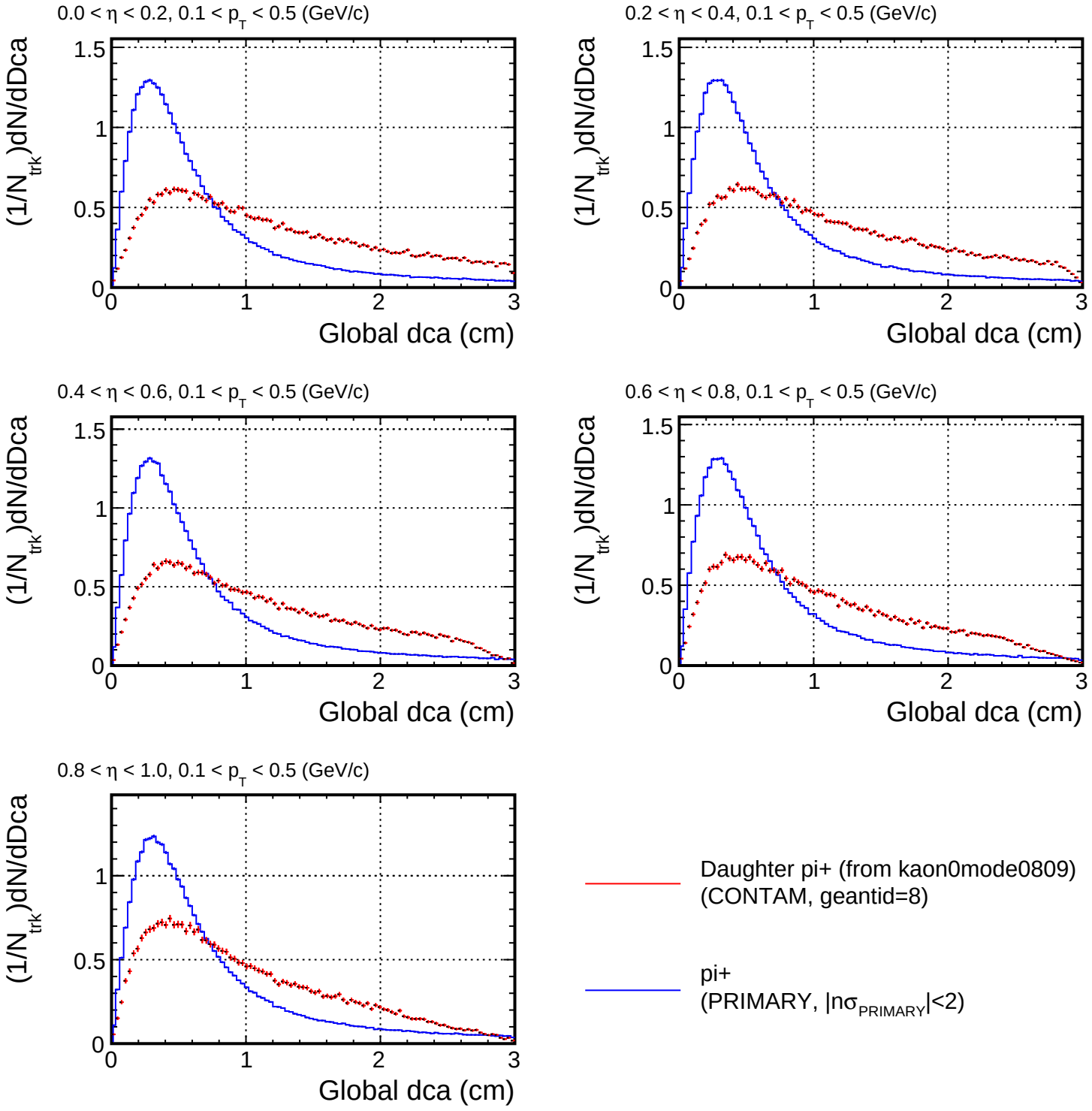




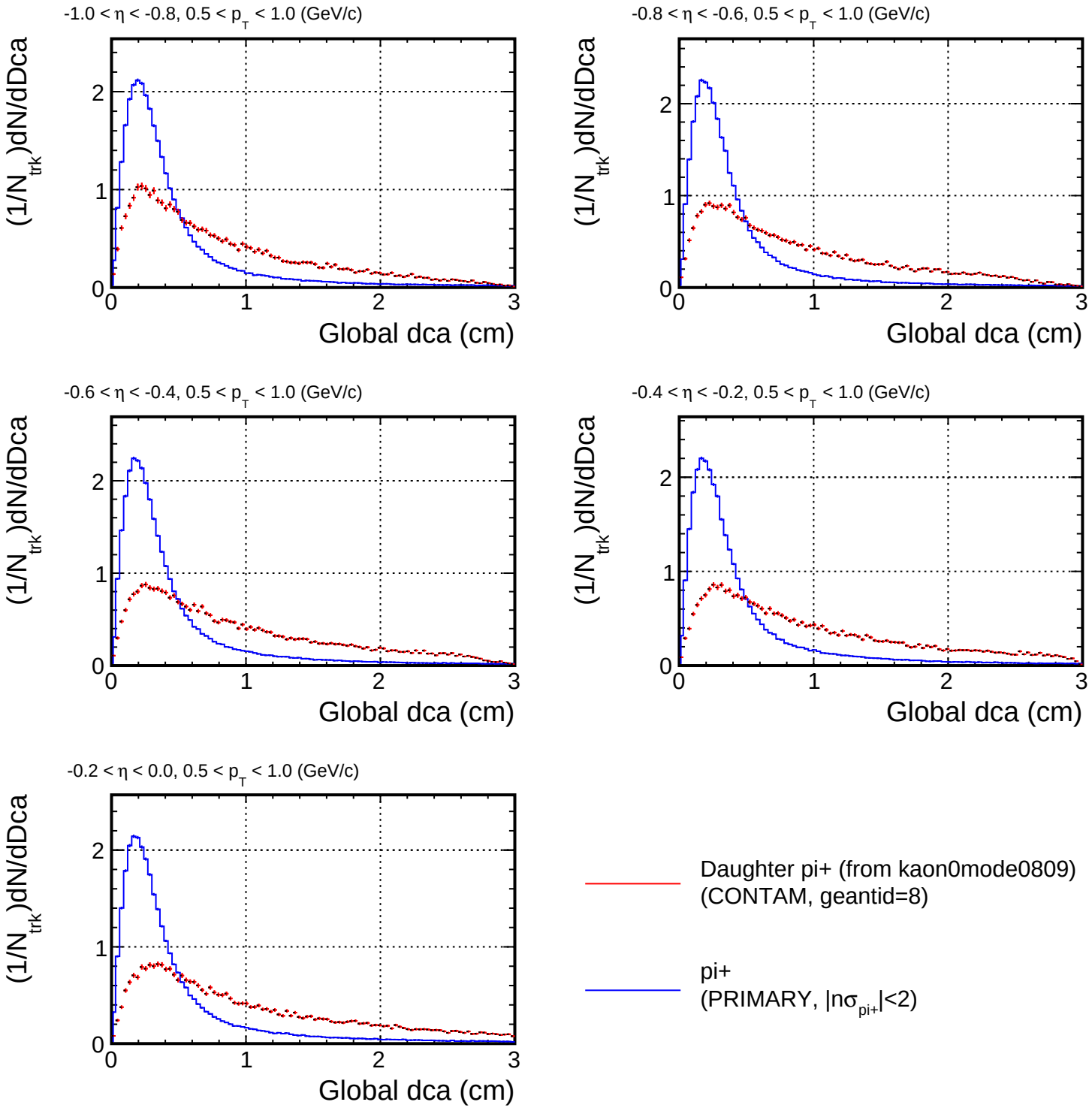
Dca distribution for (p_T, η) slices



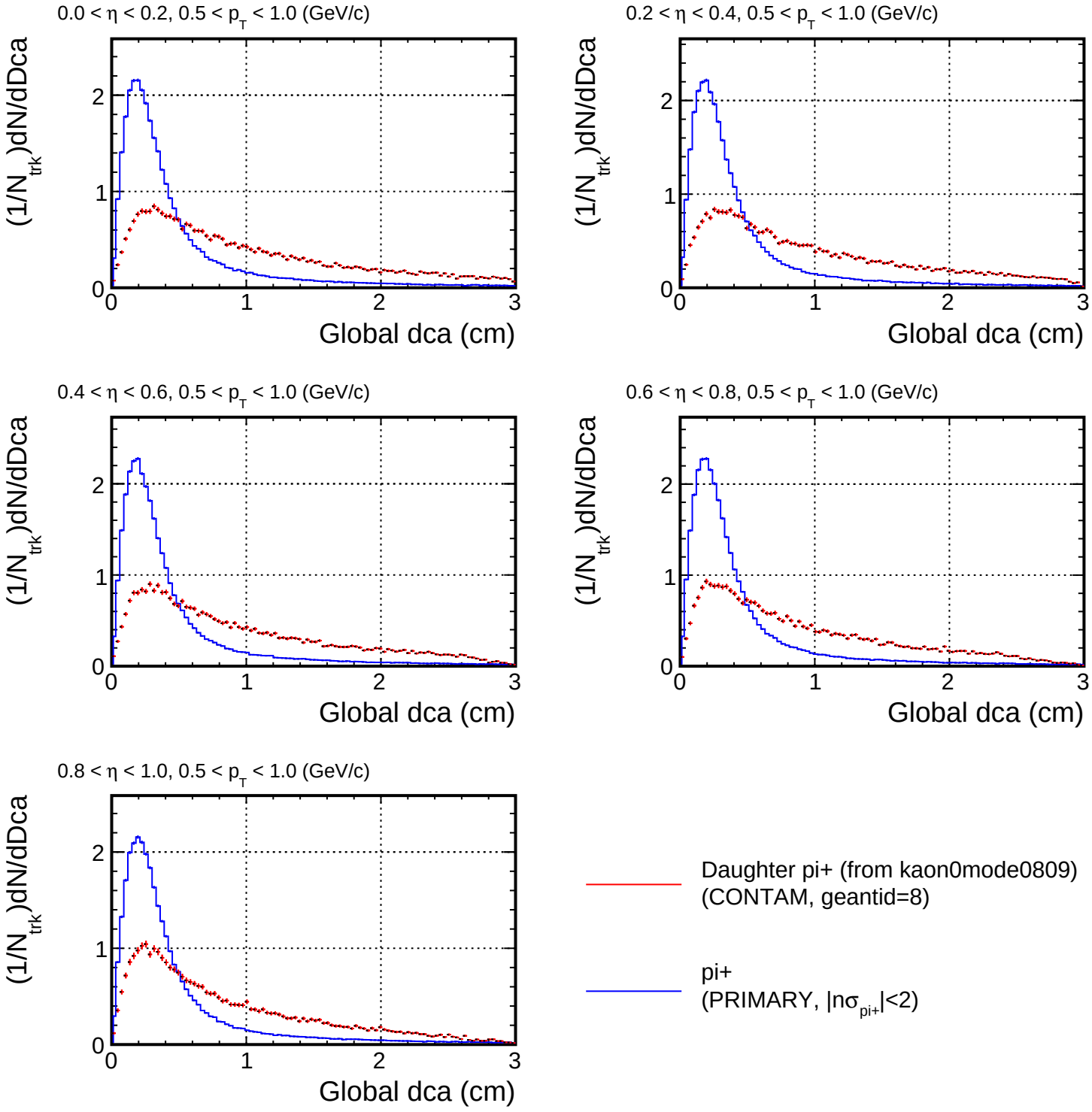
Dca distribution for (p_T, η) slices



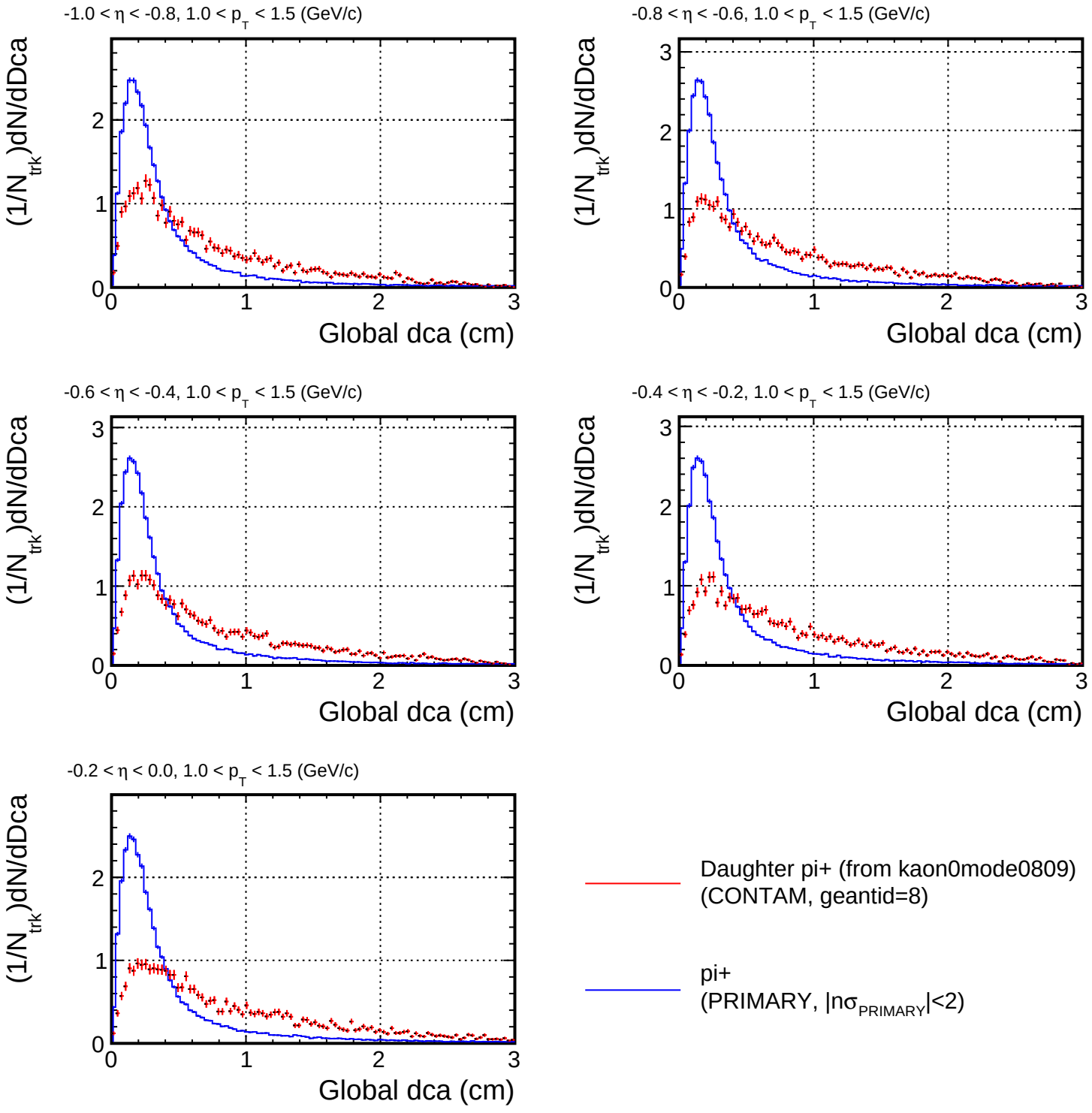
Dca distribution for (p_T, η) slices



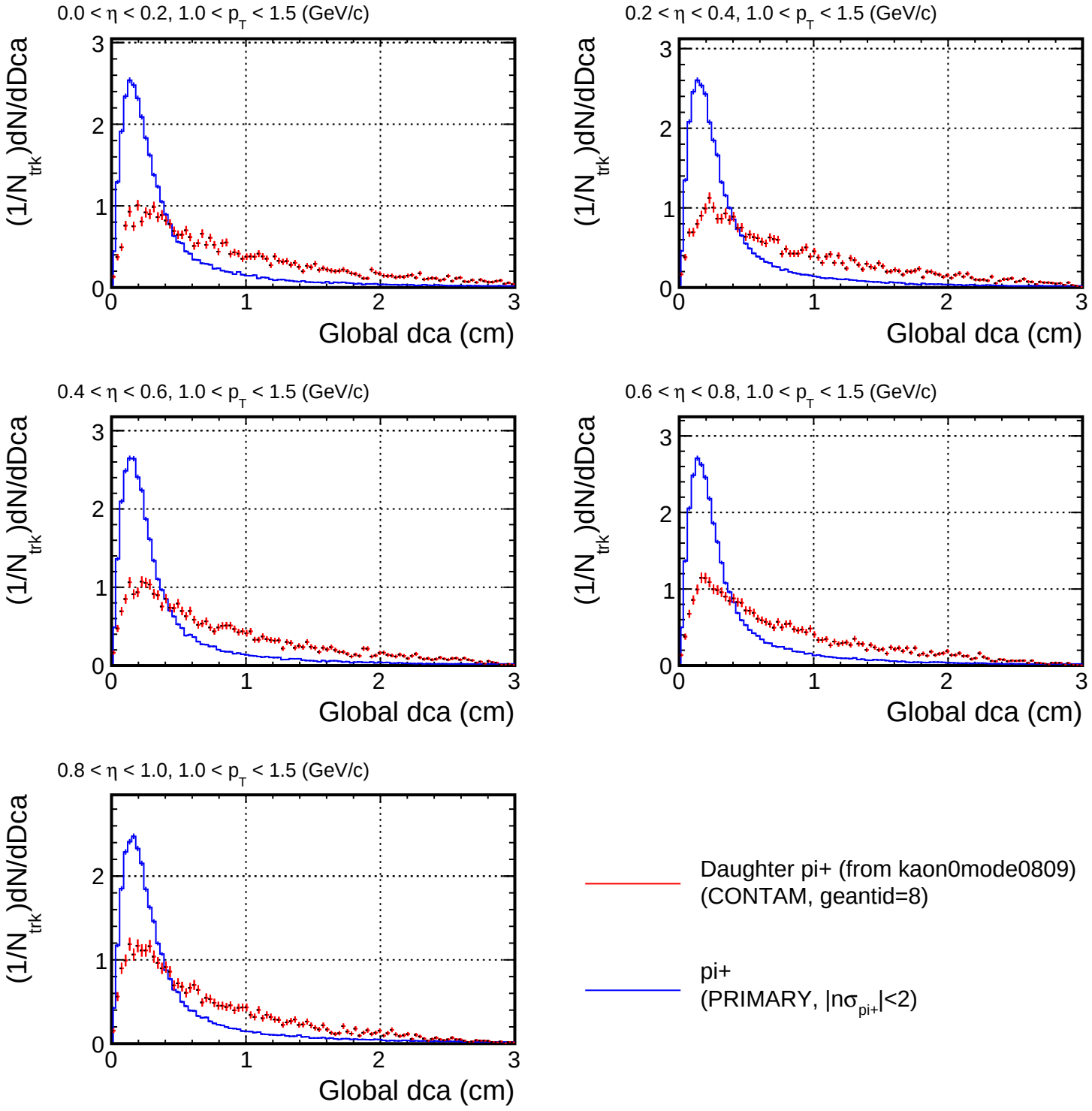
Dca distribution for (p_T, η) slices



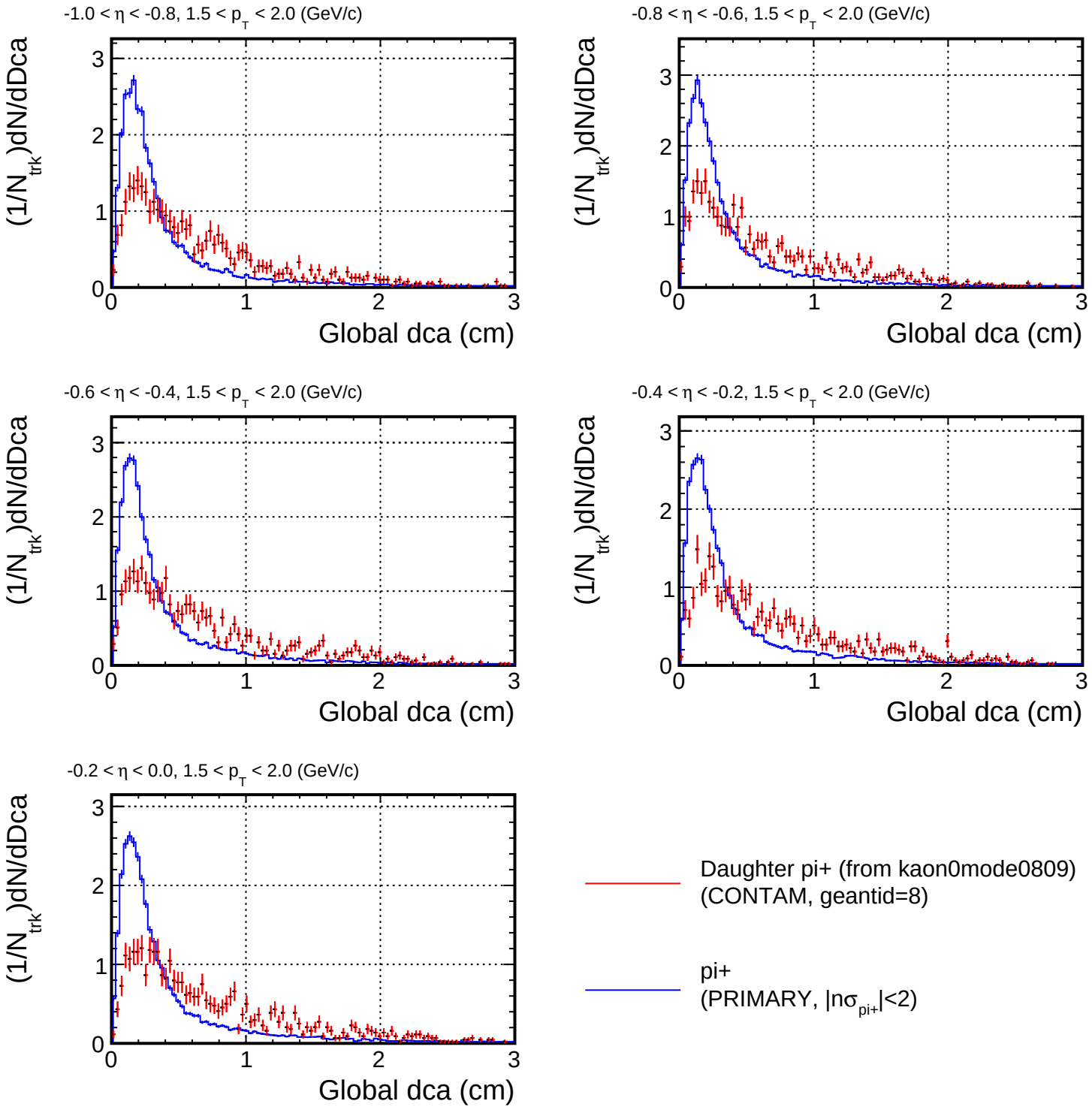
Dca distribution for (p_T, η) slices



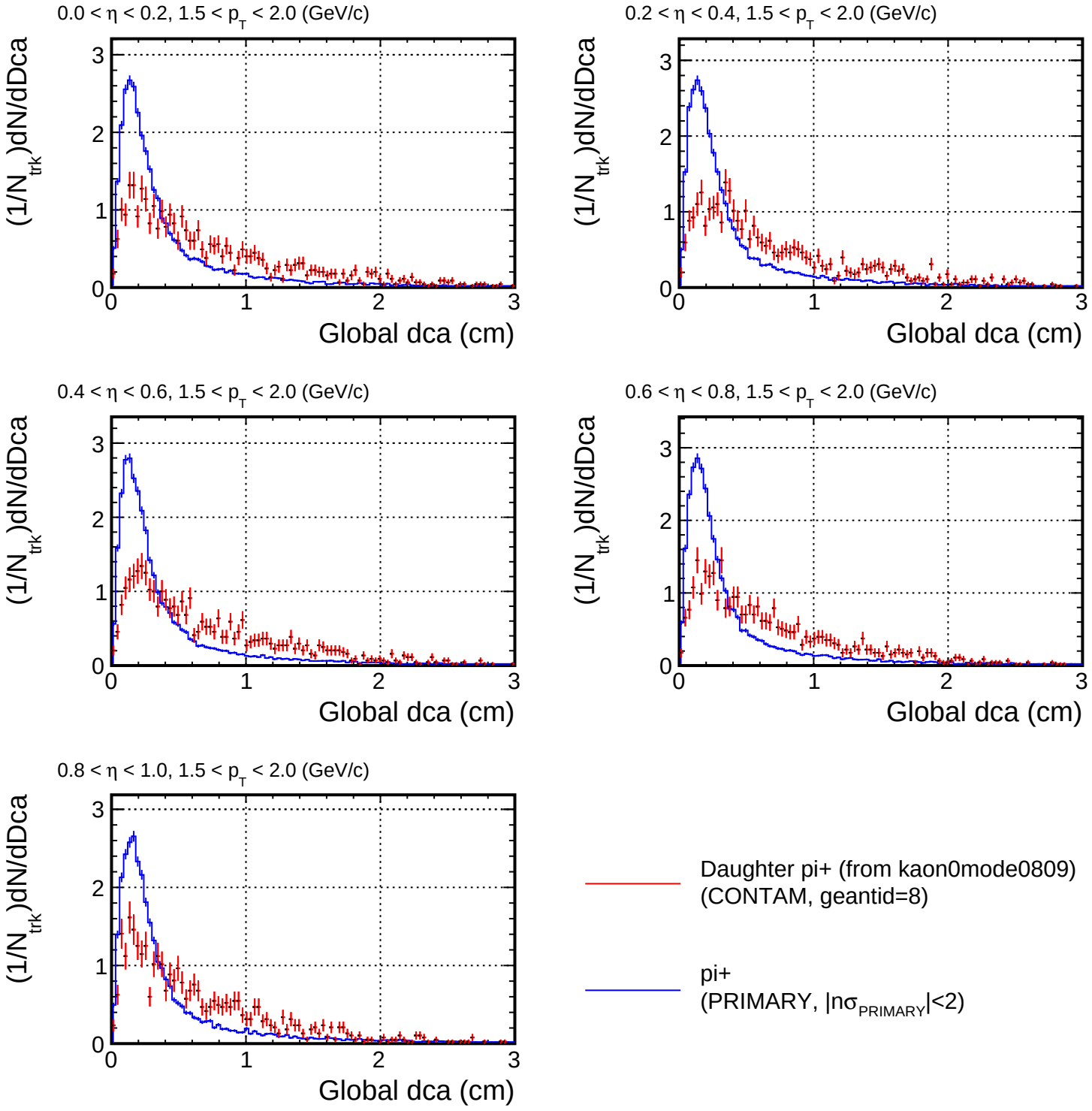
Dca distribution for (p_T, η) slices



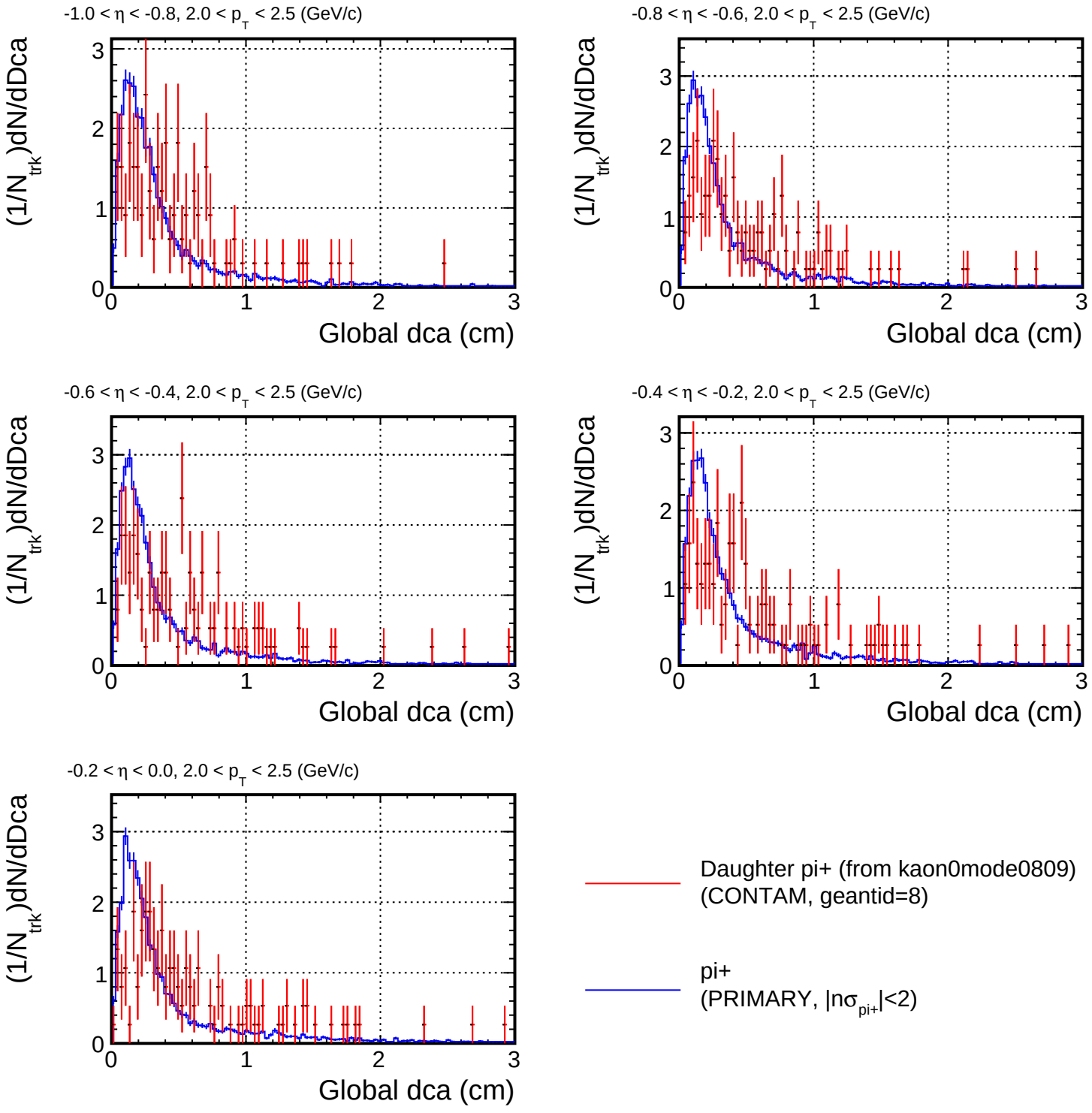
Dca distribution for (p_T, η) slices



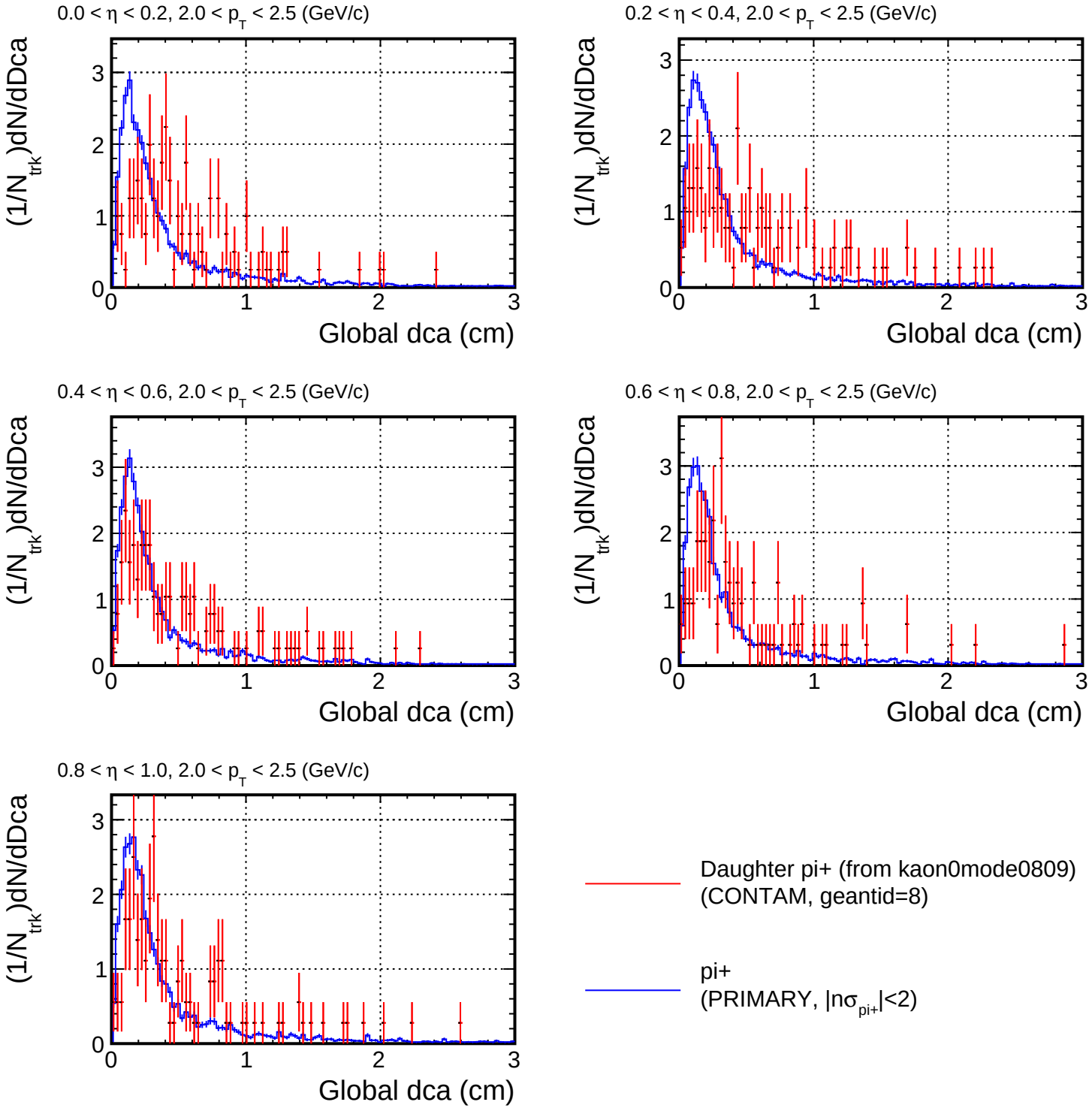
Dca distribution for (p_T, η) slices



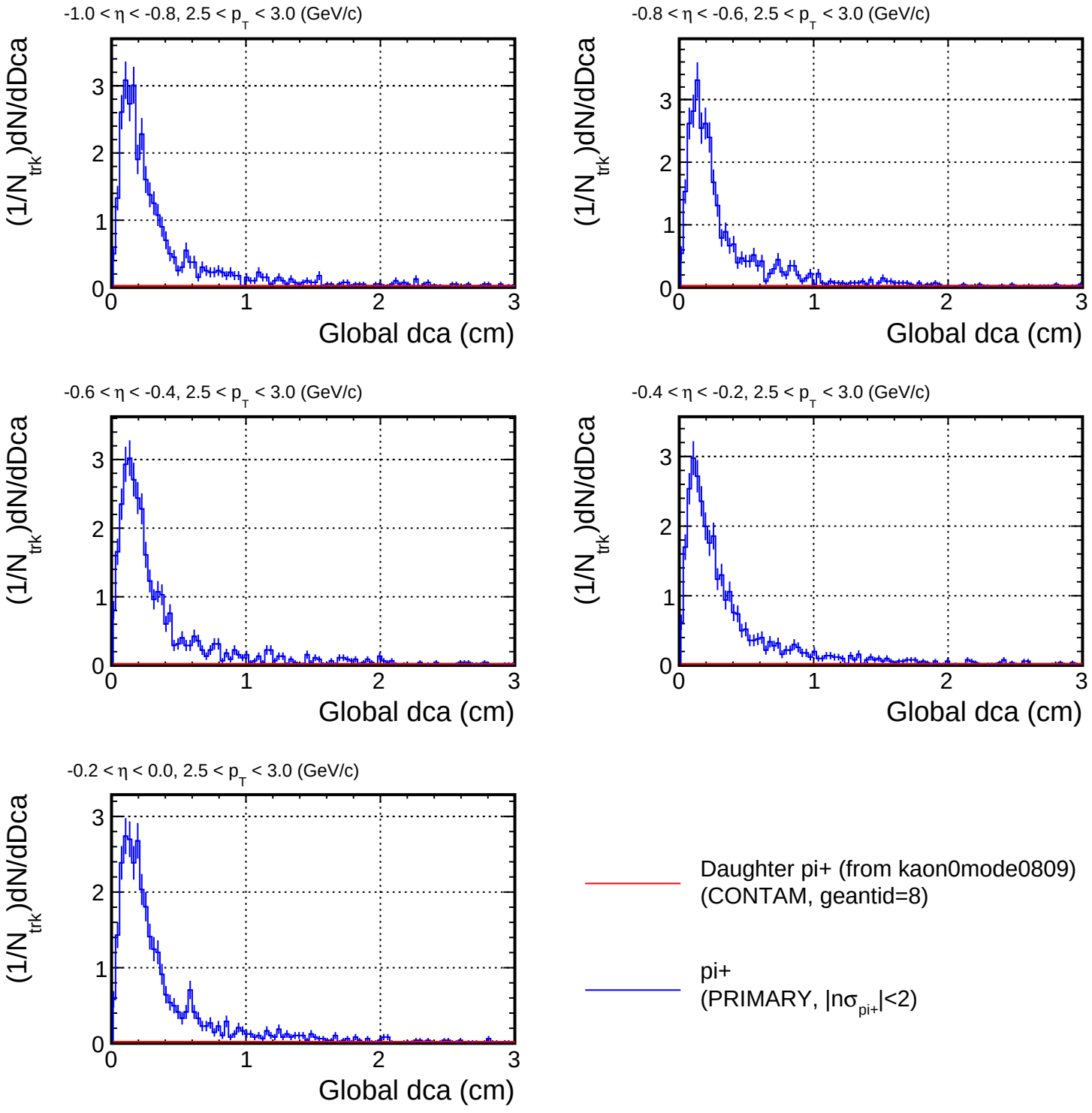
Dca distribution for (p_T, η) slices



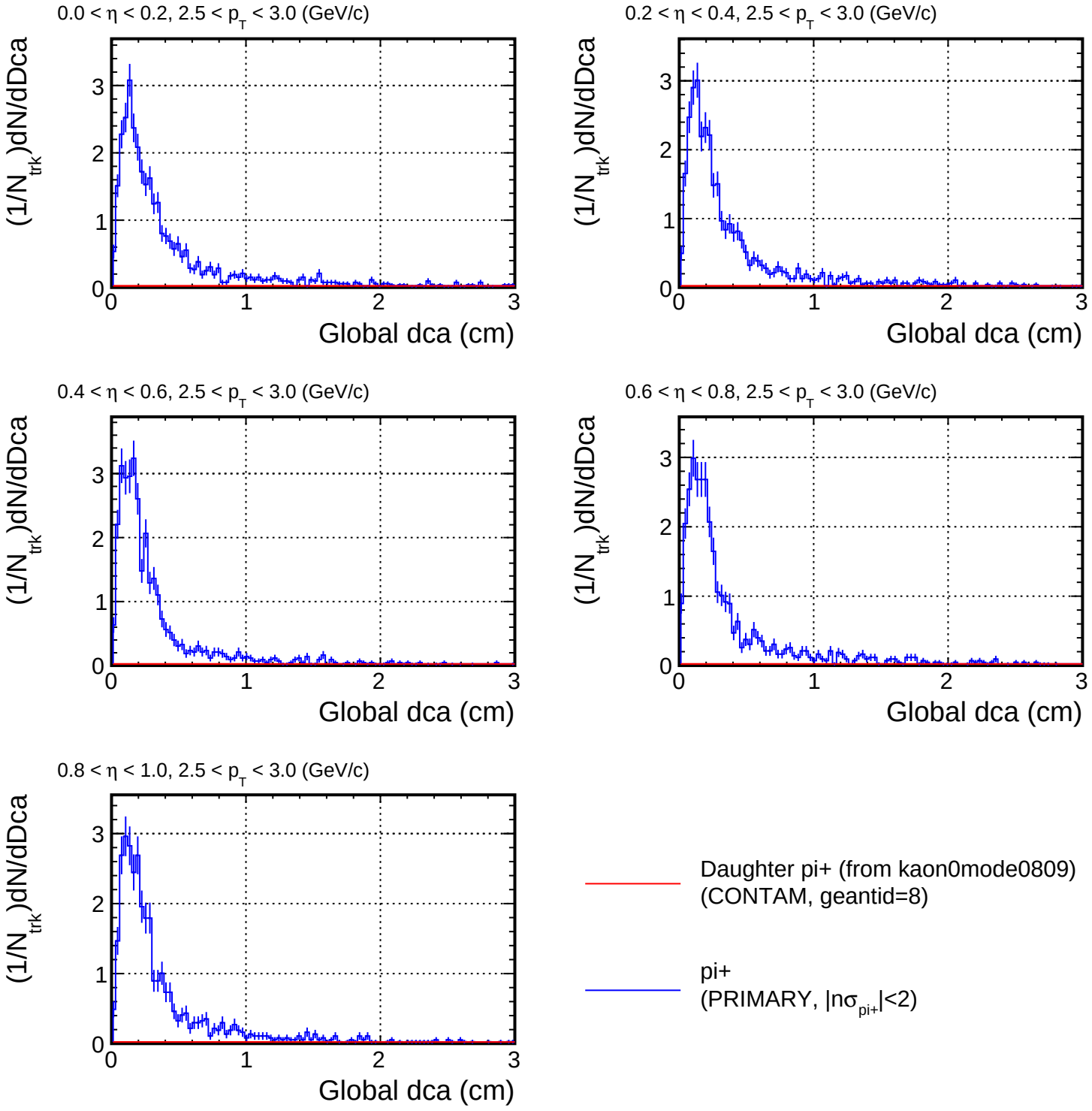
Dca distribution for (p_T, η) slices



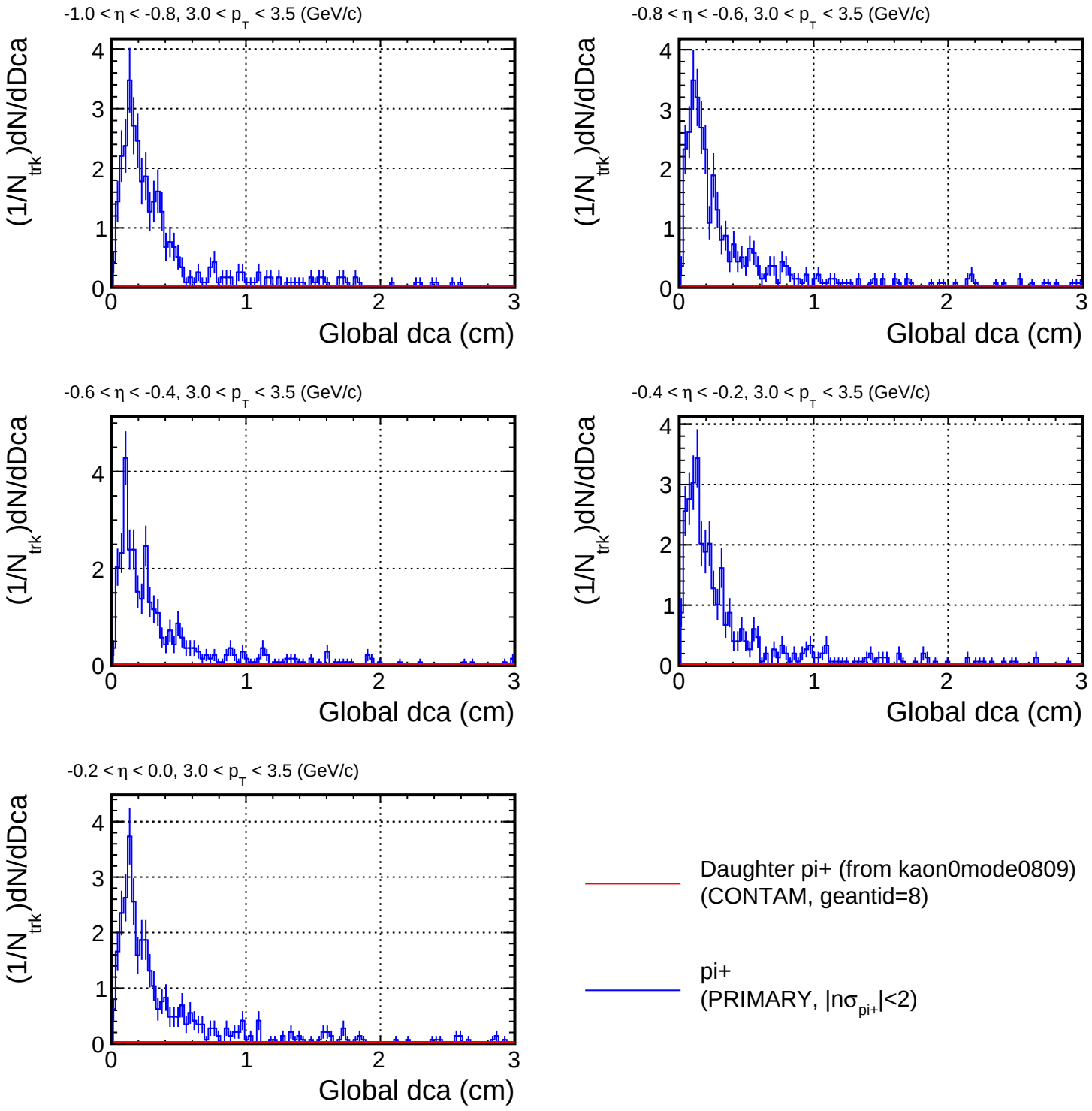
Dca distribution for (p_T, η) slices



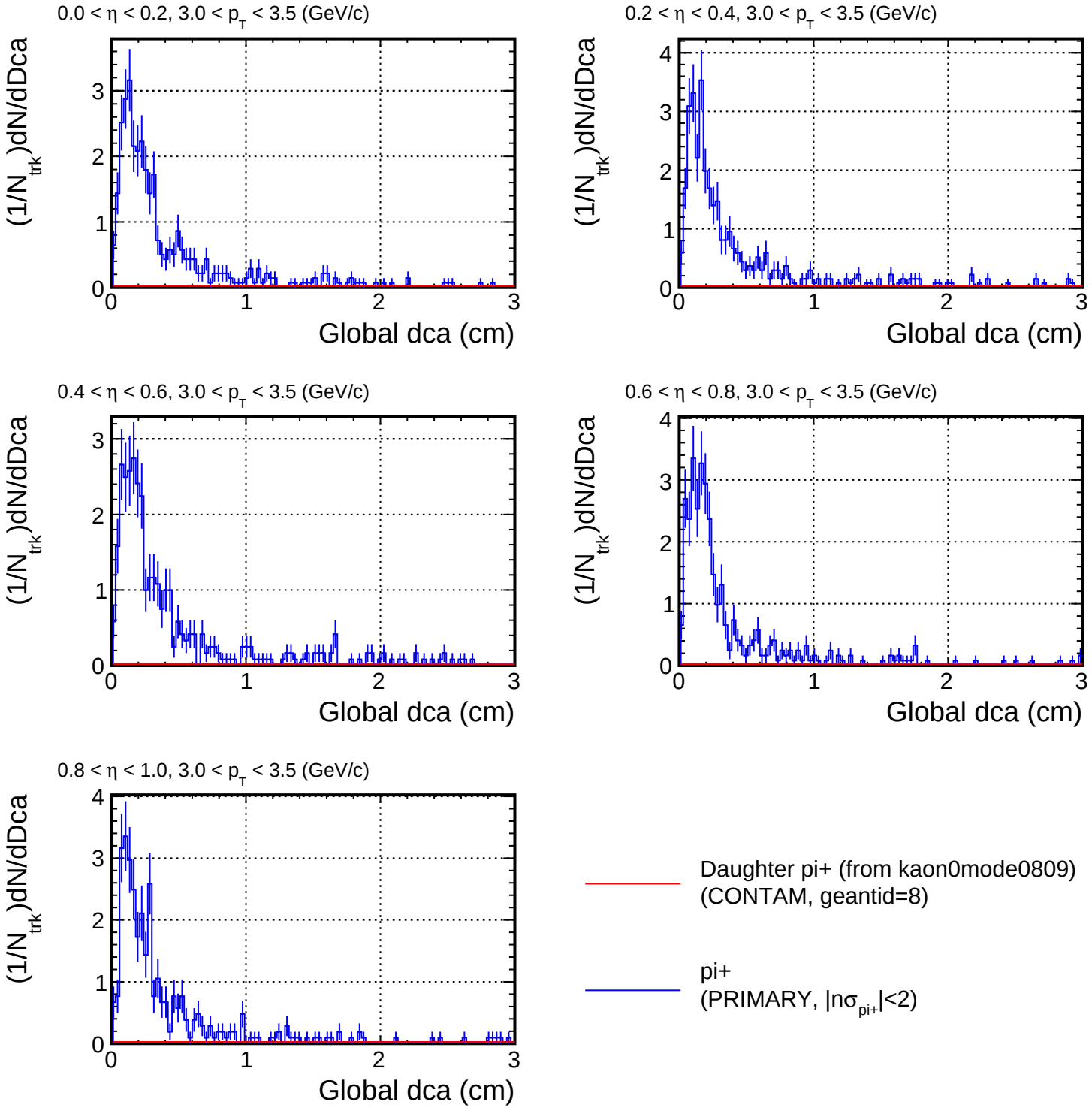
Dca distribution for (p_T, η) slices



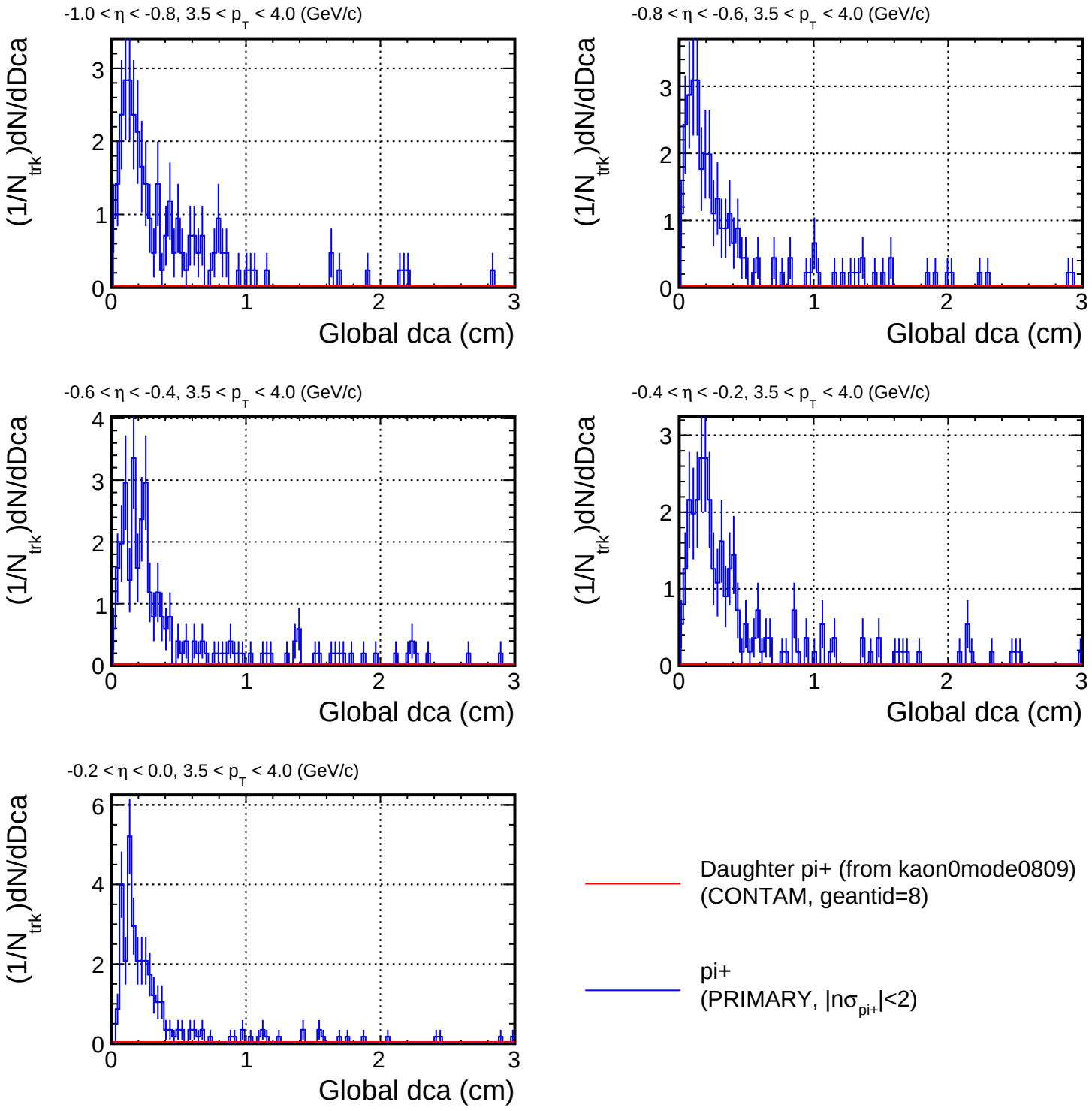
Dca distribution for (p_T, η) slices



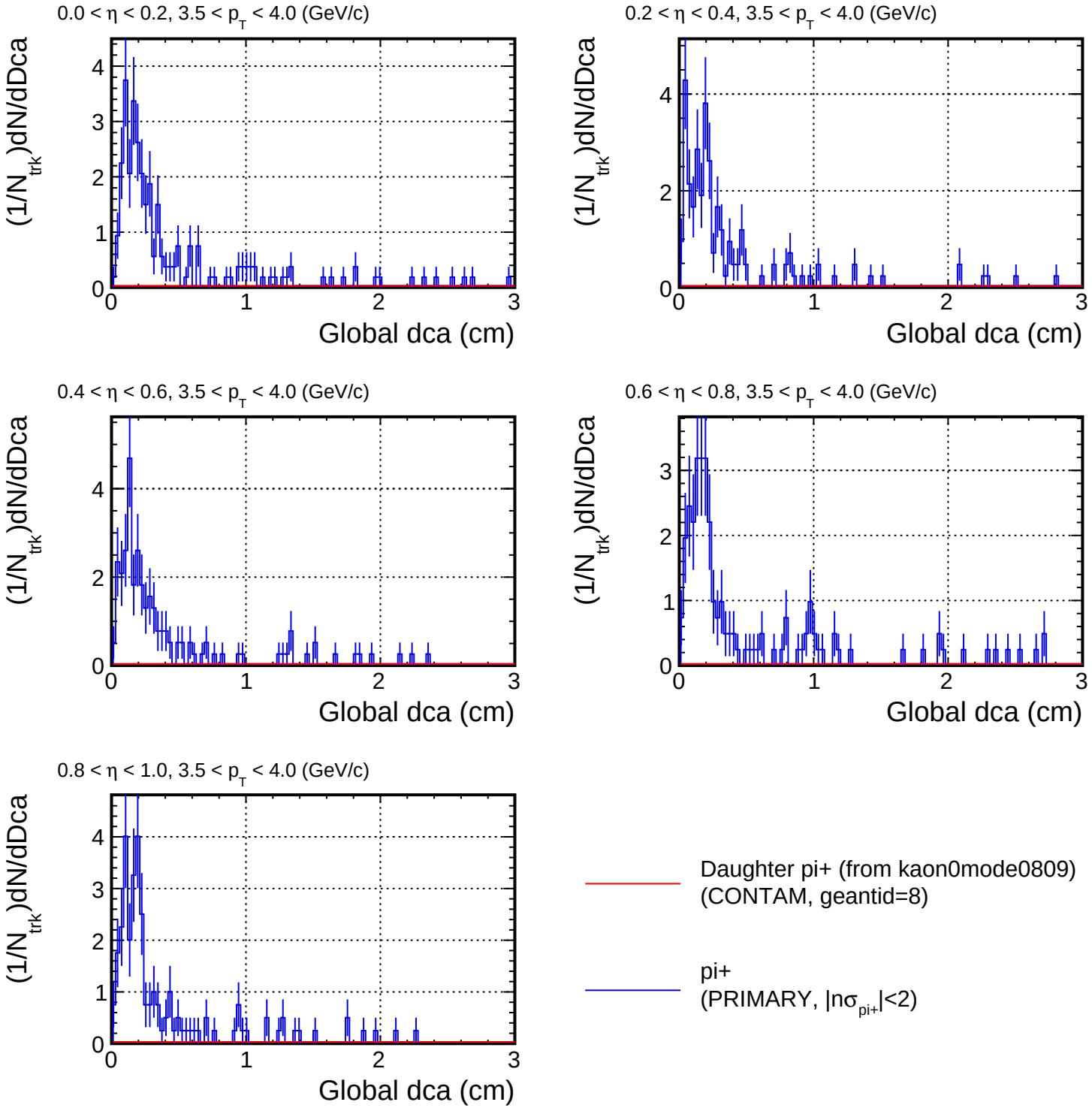
Dca distribution for (p_T, η) slices



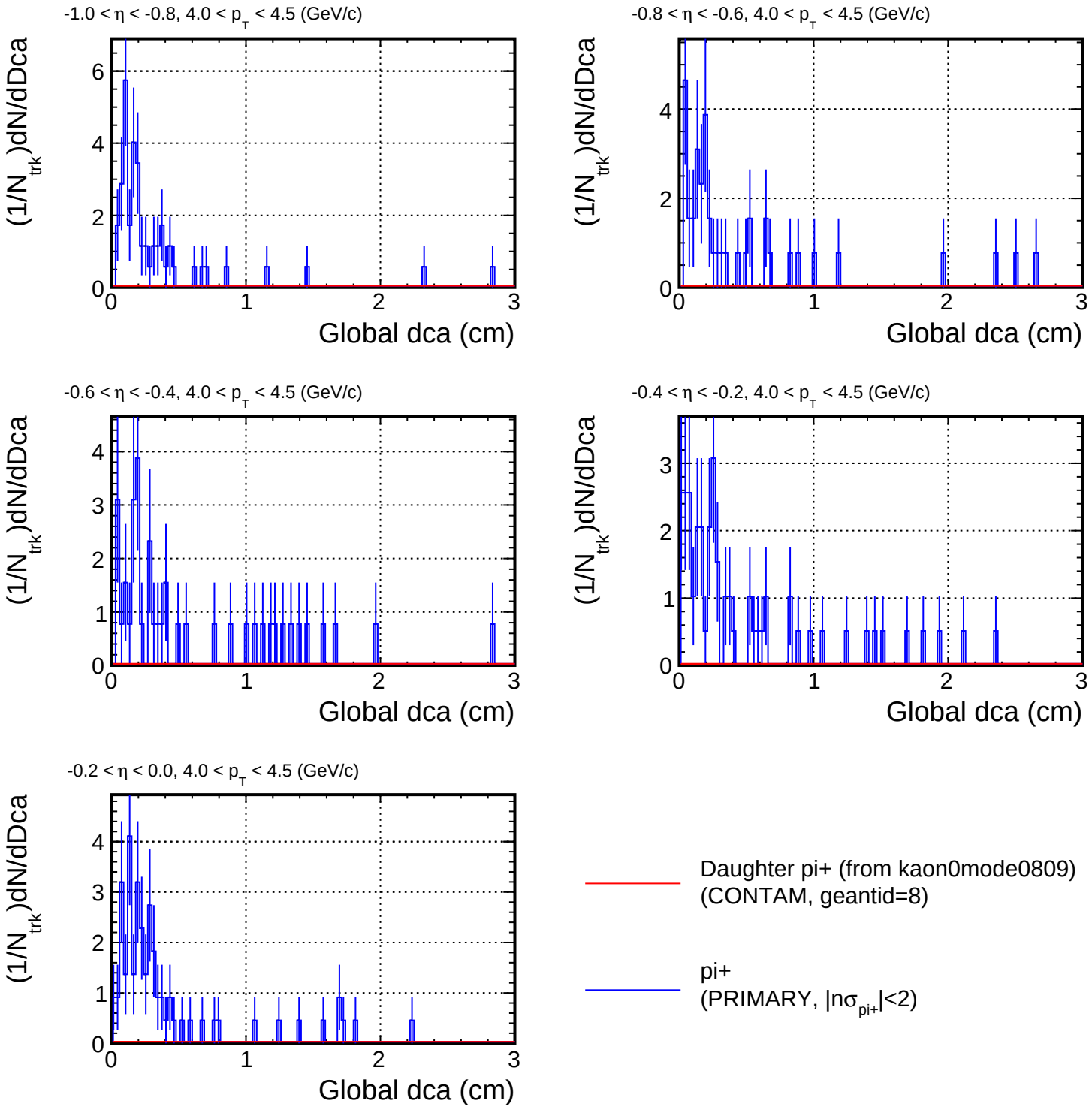
Dca distribution for (p_T, η) slices



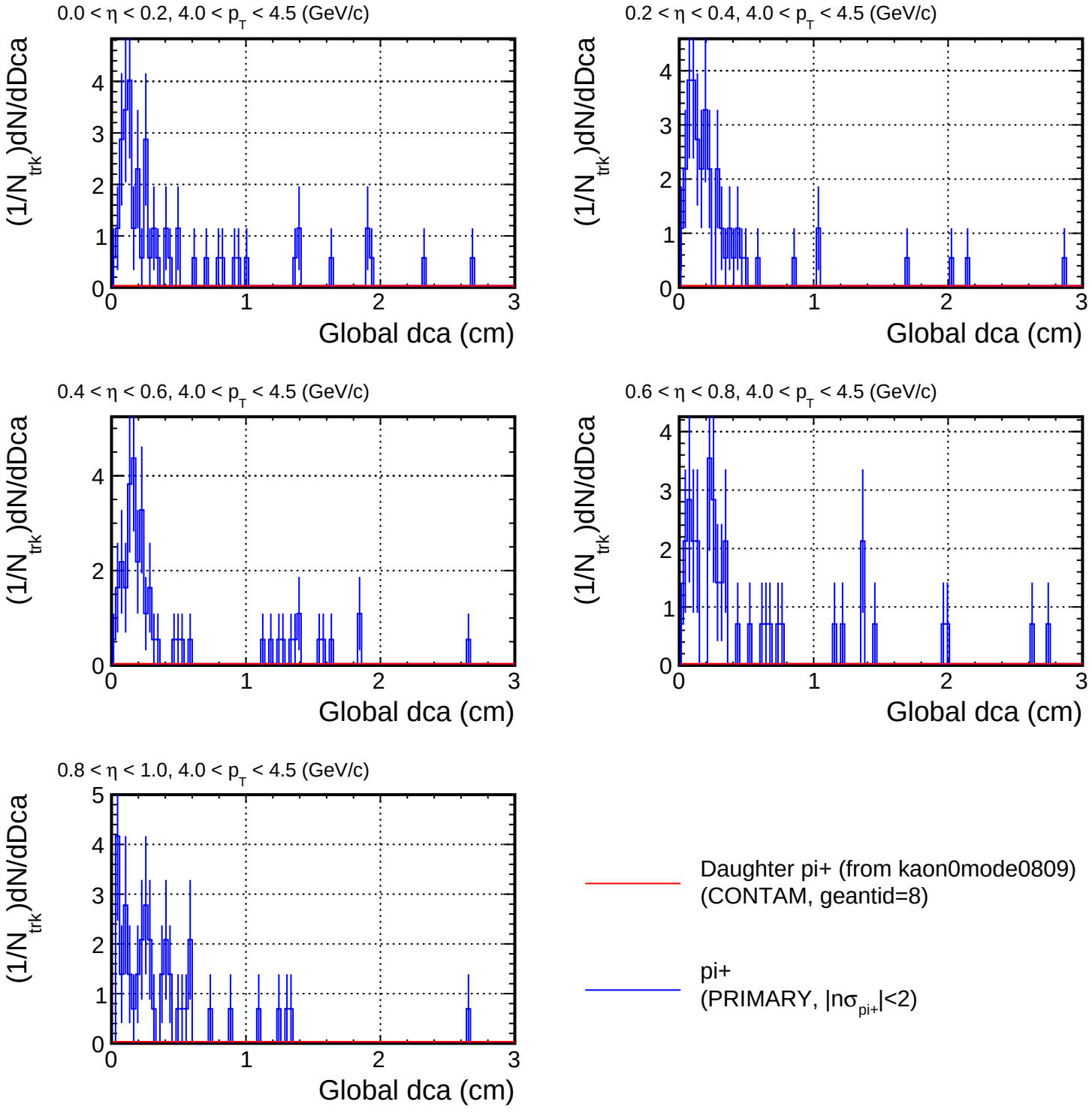
Dca distribution for (p_T, η) slices



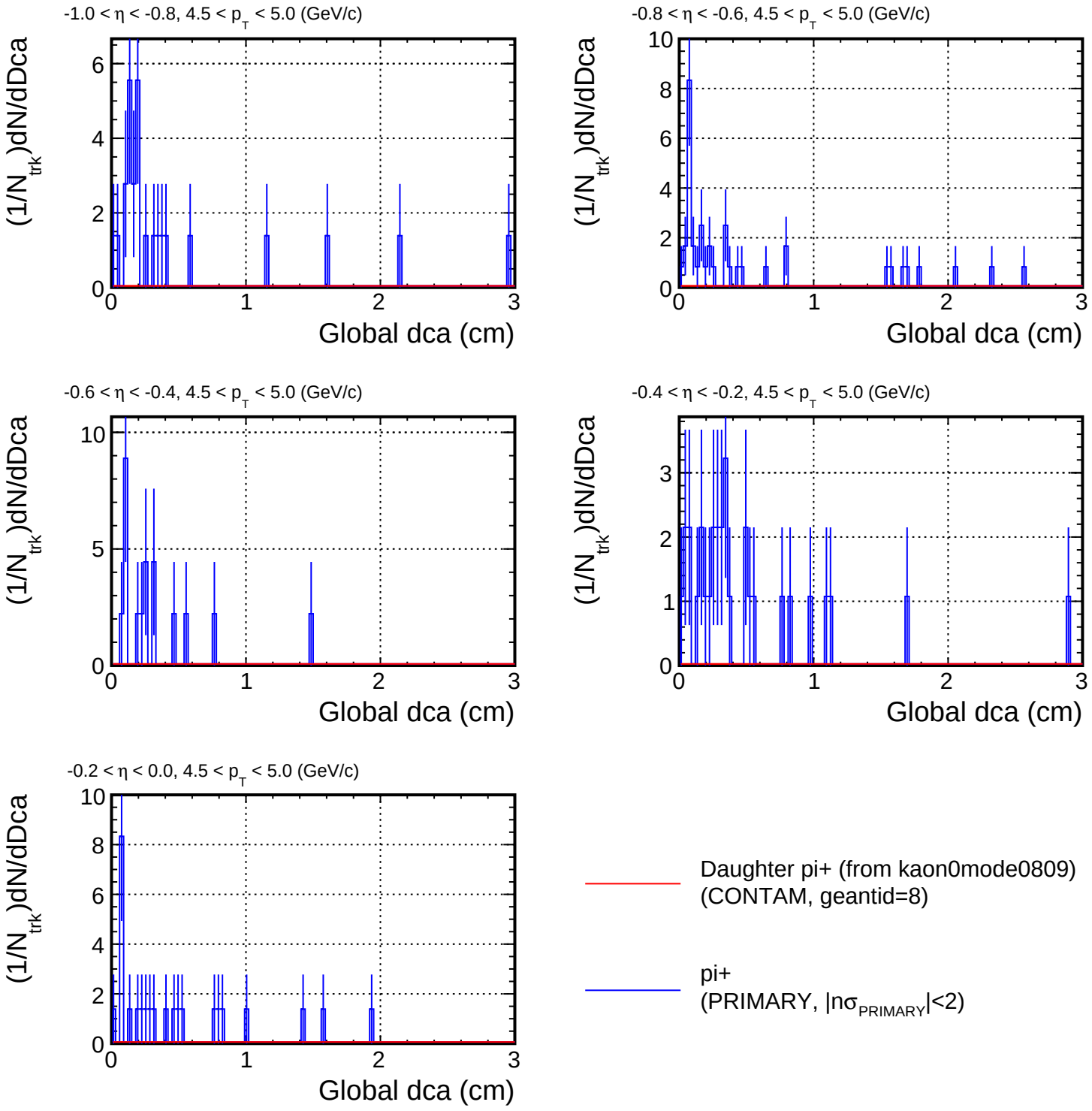
Dca distribution for (p_T, η) slices



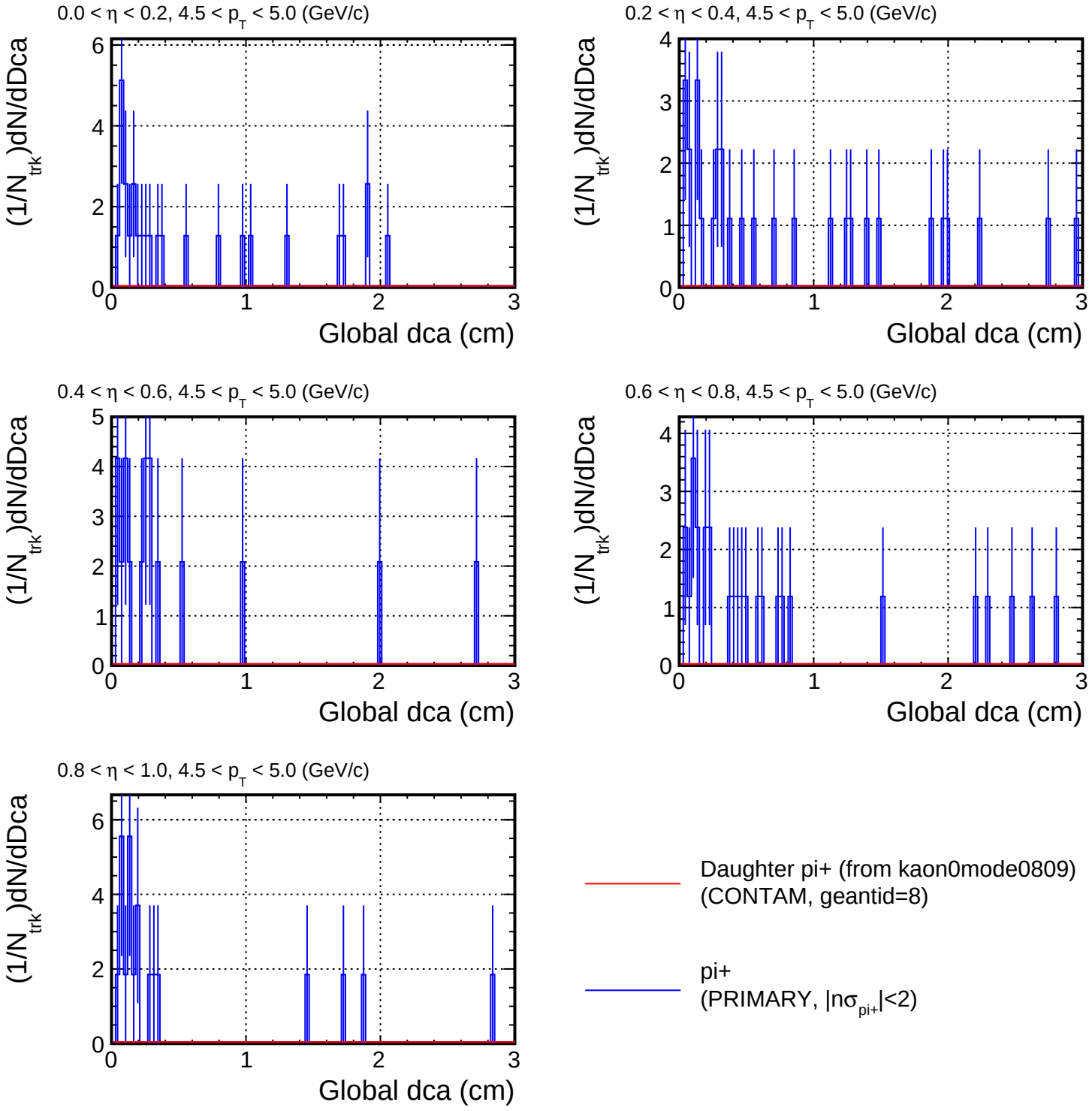
Dca distribution for (p_T, η) slices



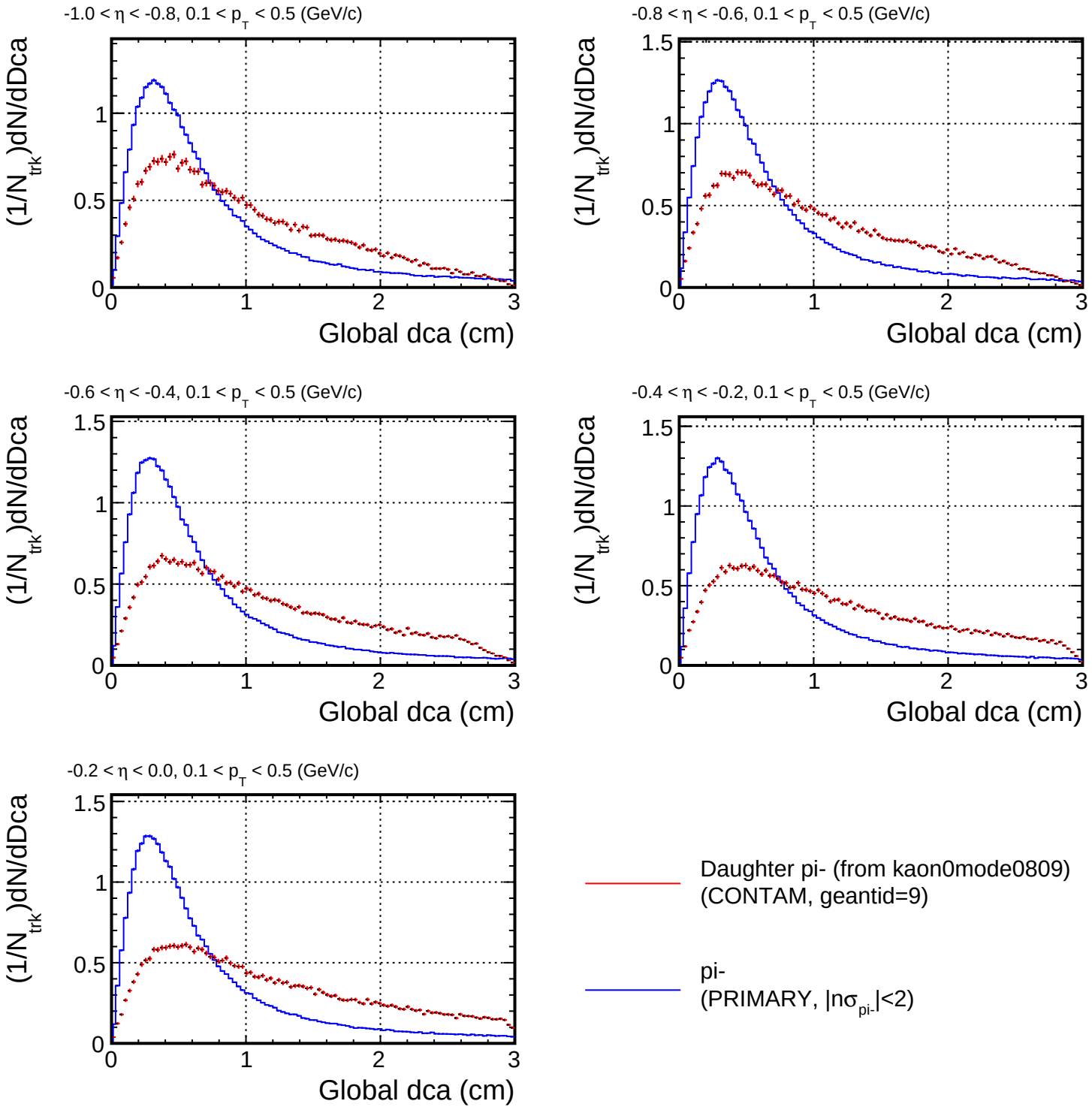
Dca distribution for (p_T, η) slices



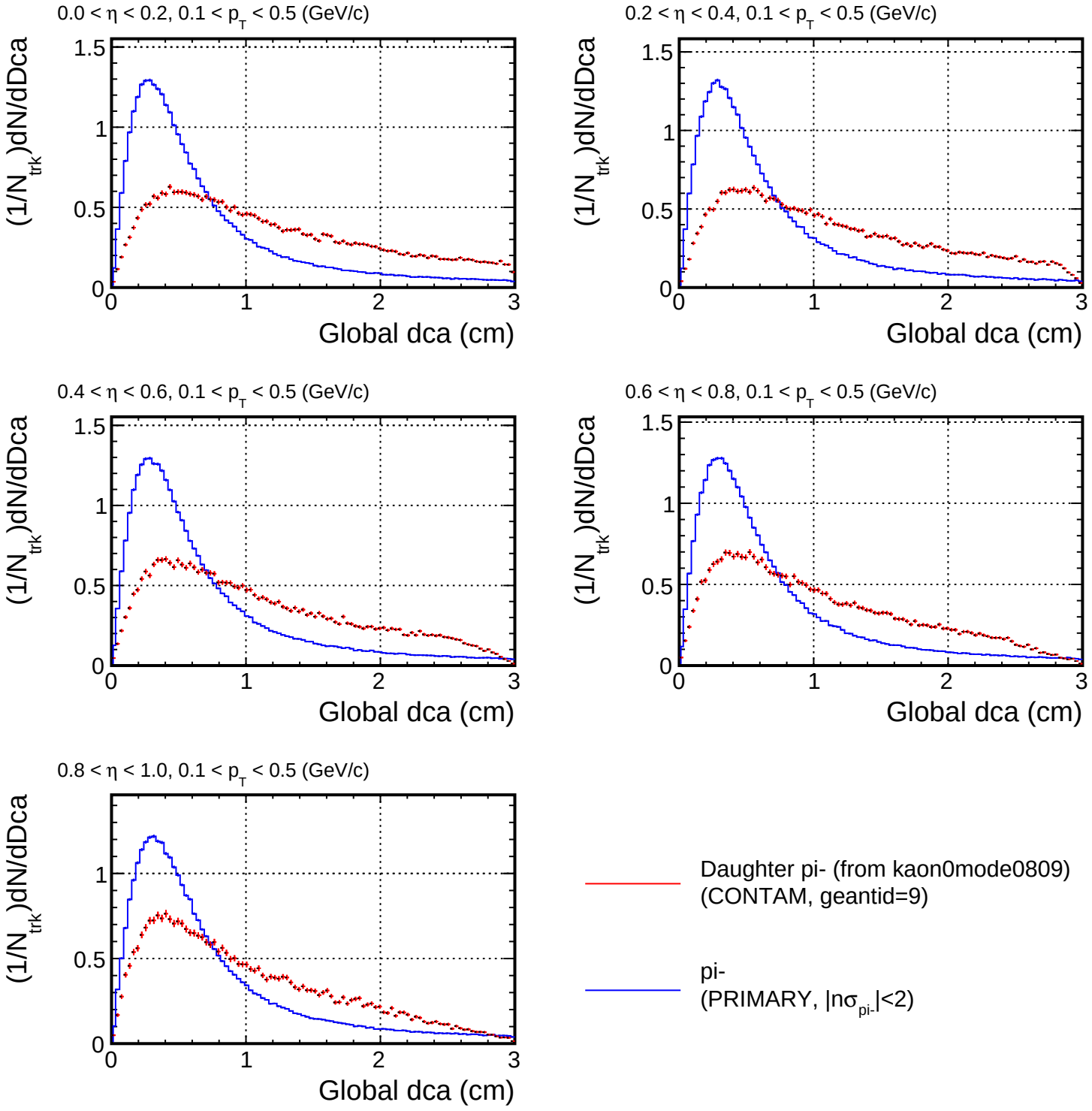
Dca distribution for (p_T, η) slices



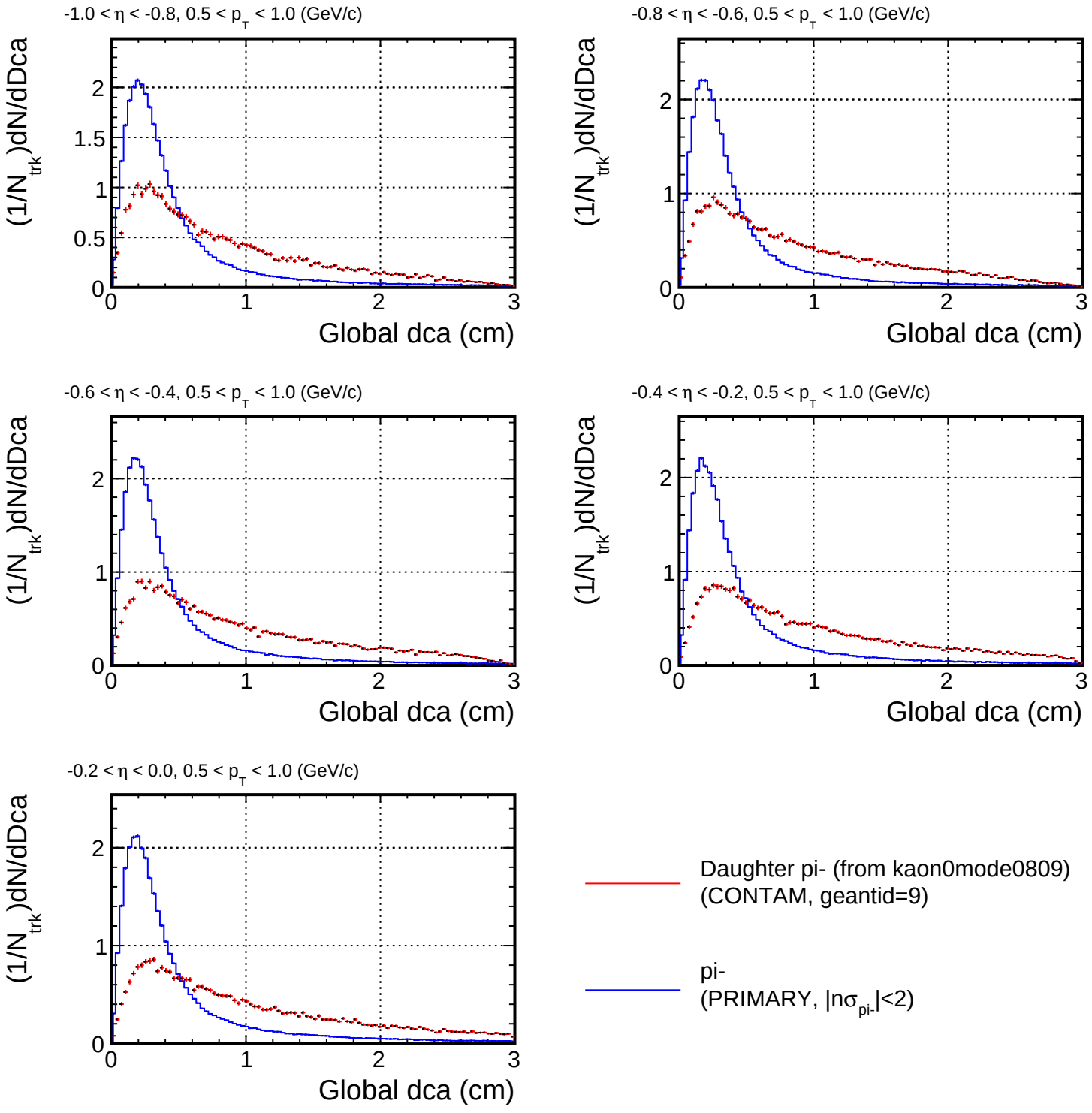
Dca distribution for (p_T, η) slices



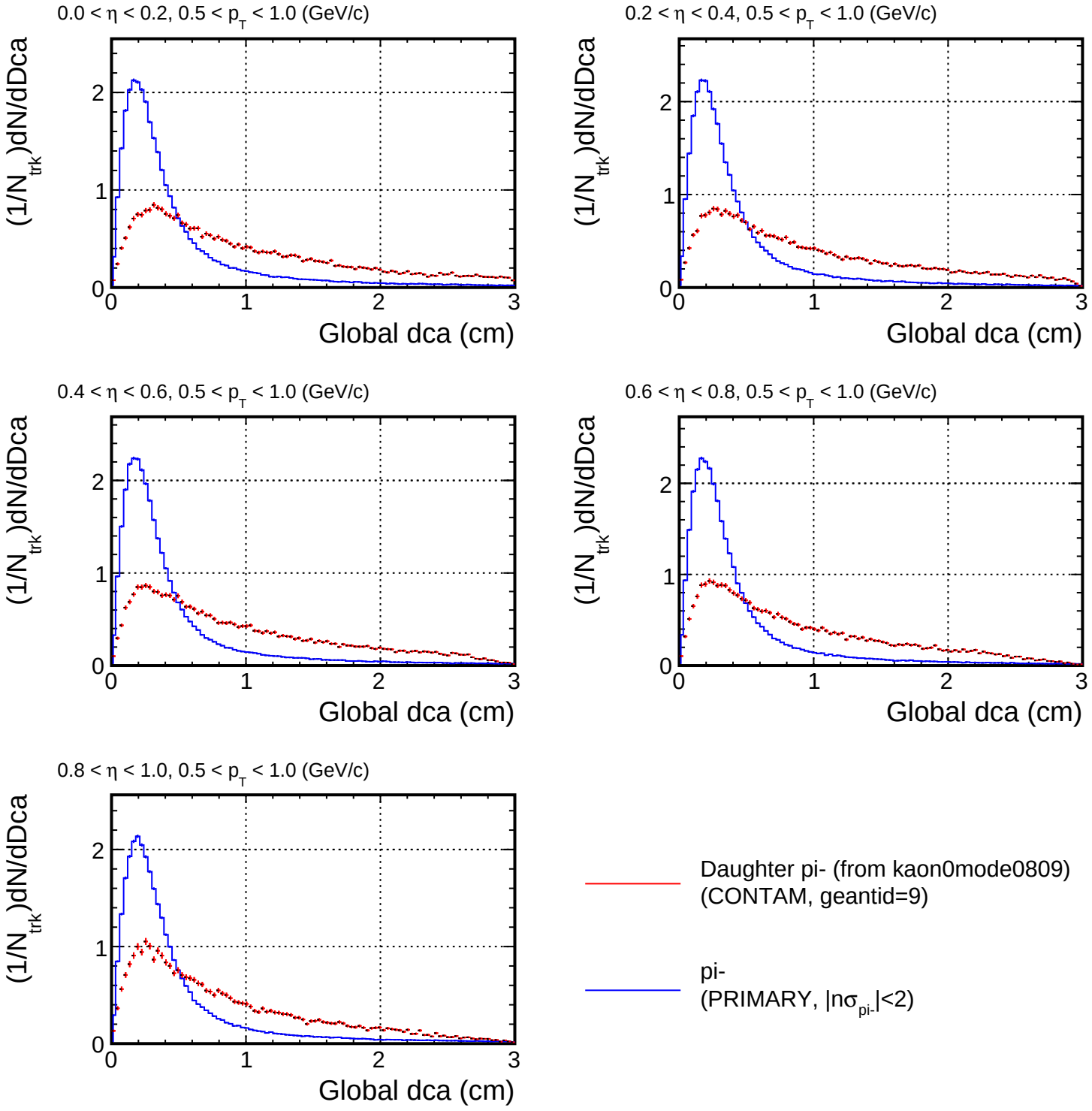
Dca distribution for (p_T, η) slices



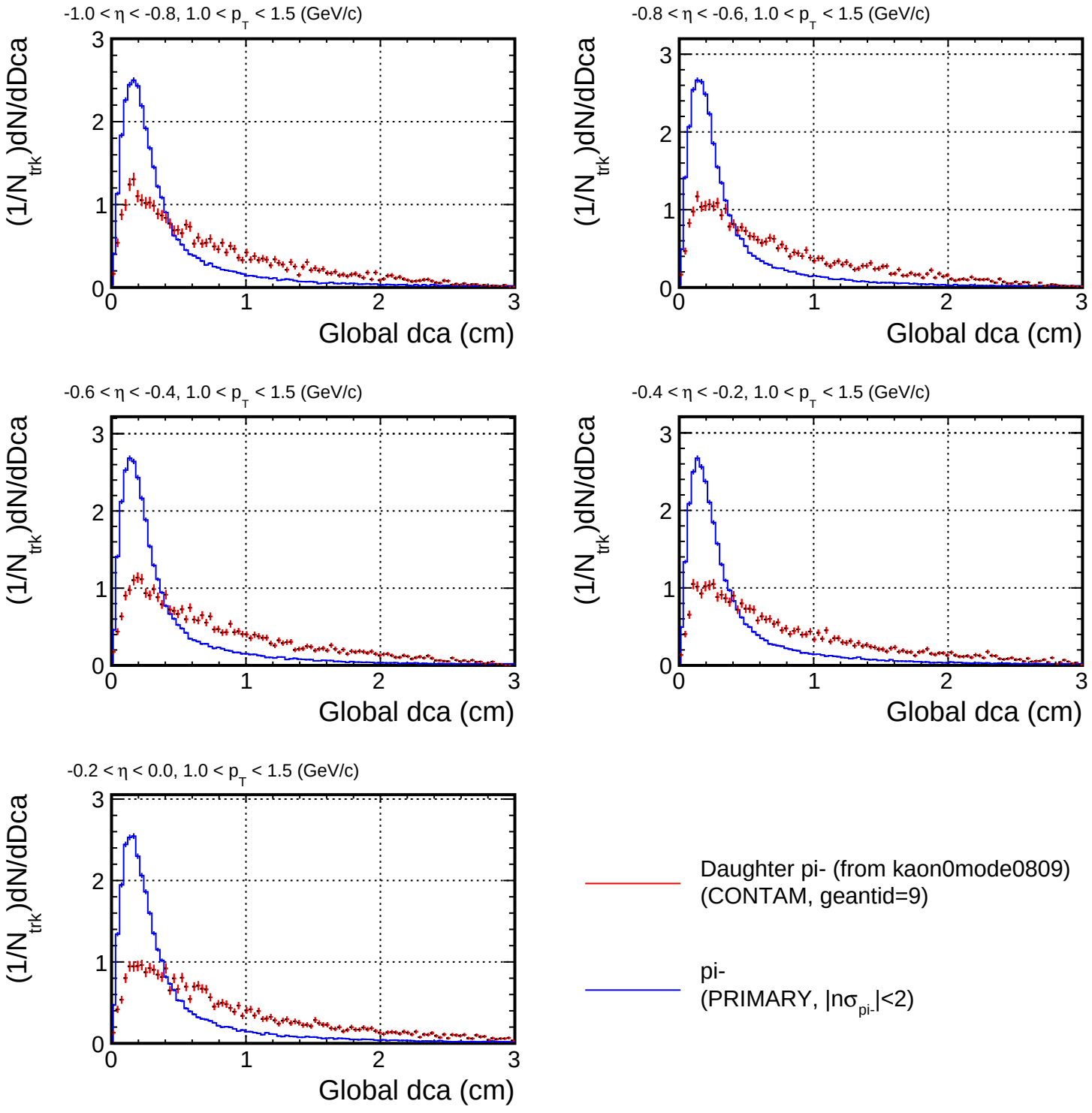
Dca distribution for (p_T, η) slices



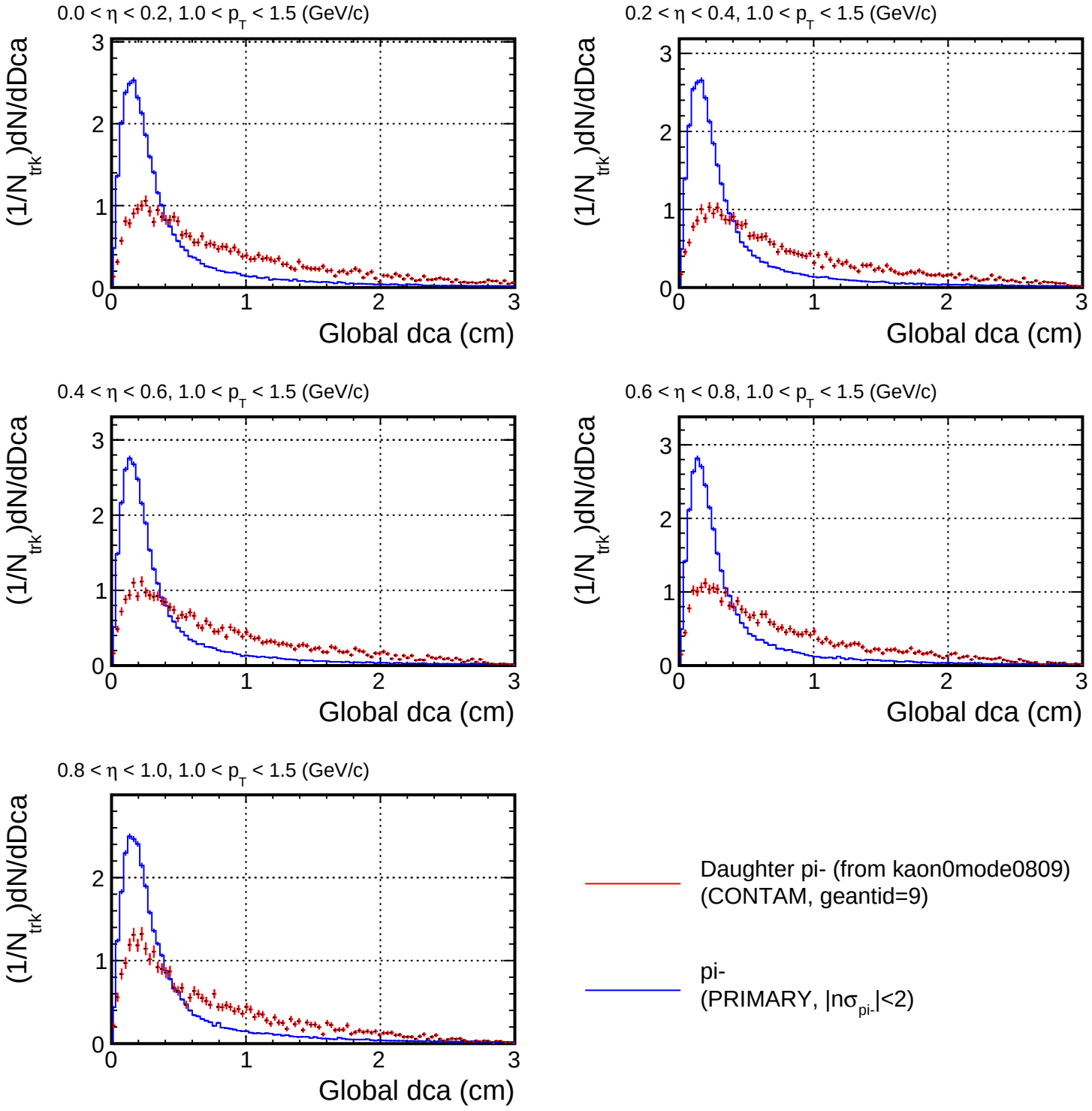
Dca distribution for (p_T, η) slices



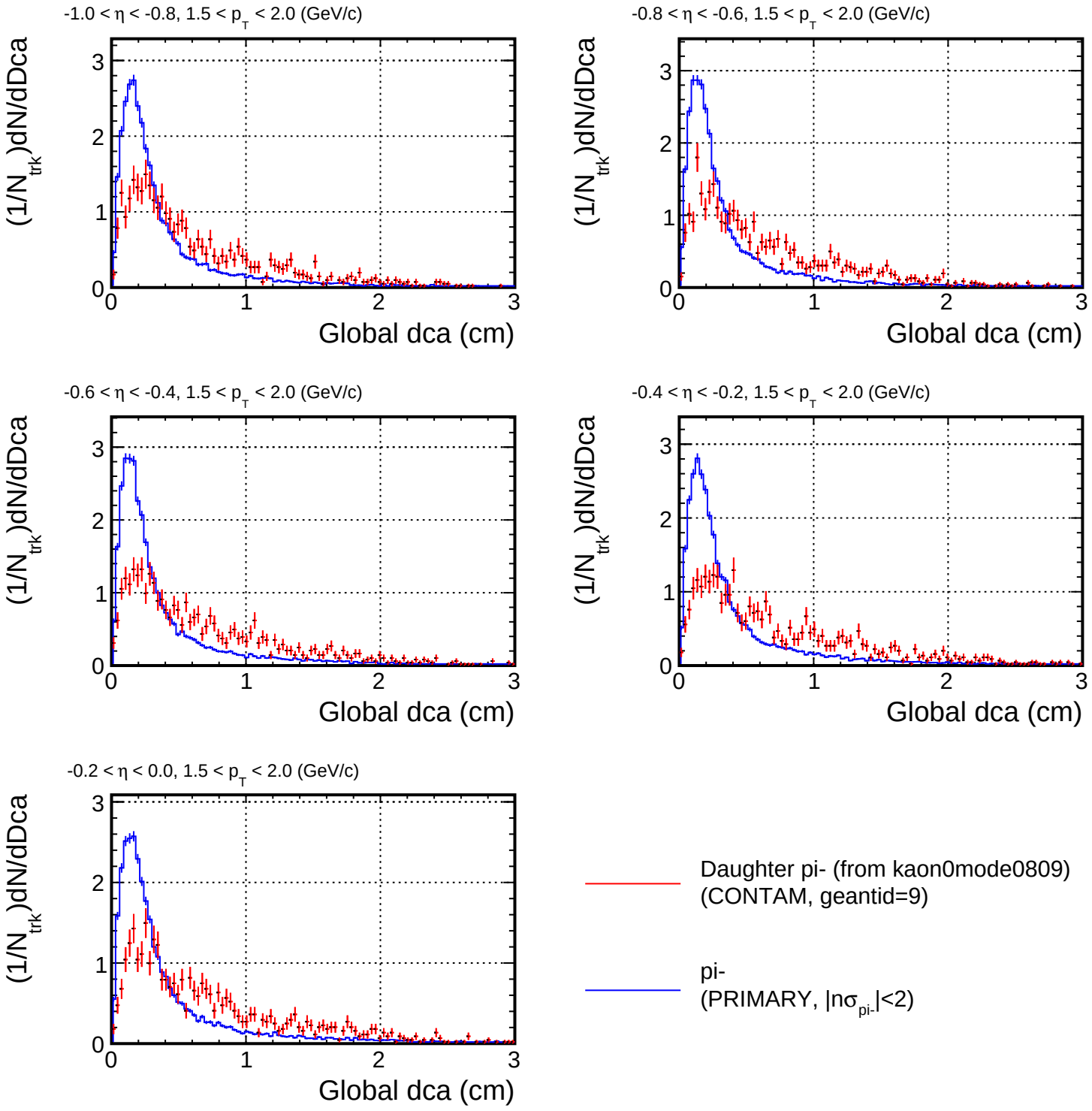
Dca distribution for (p_T, η) slices



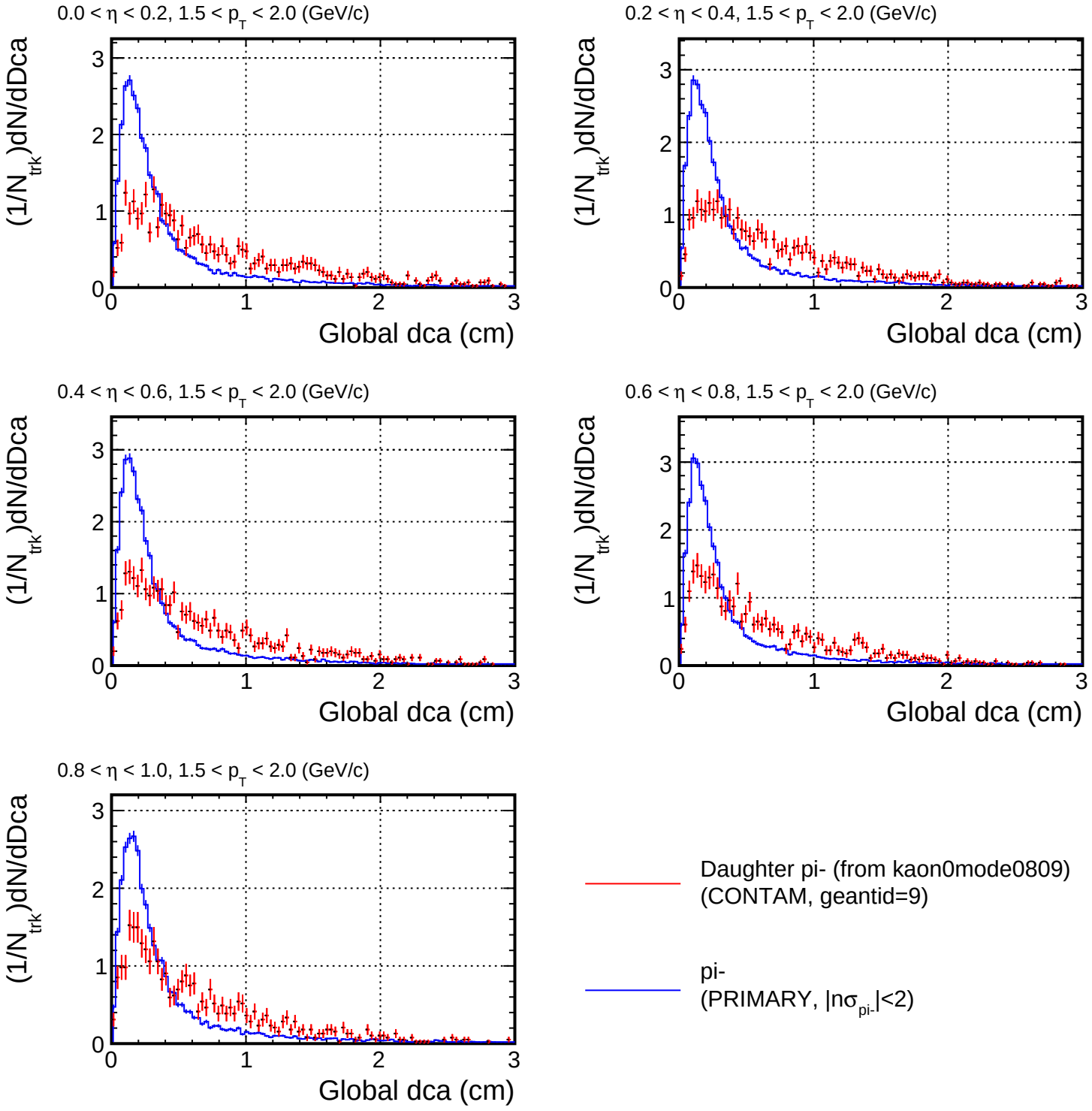
Dca distribution for (p_T, η) slices



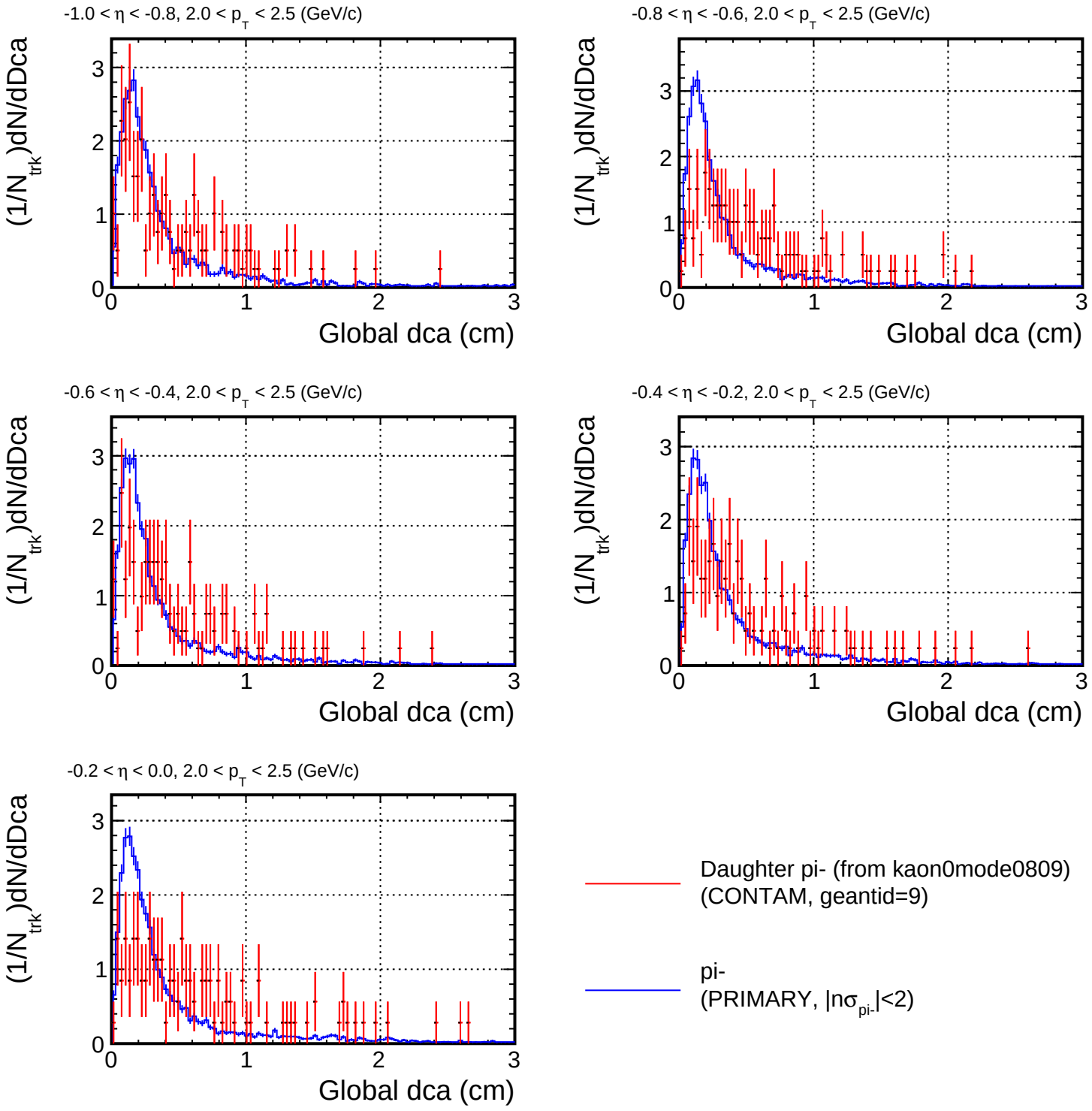
Dca distribution for (p_T, η) slices



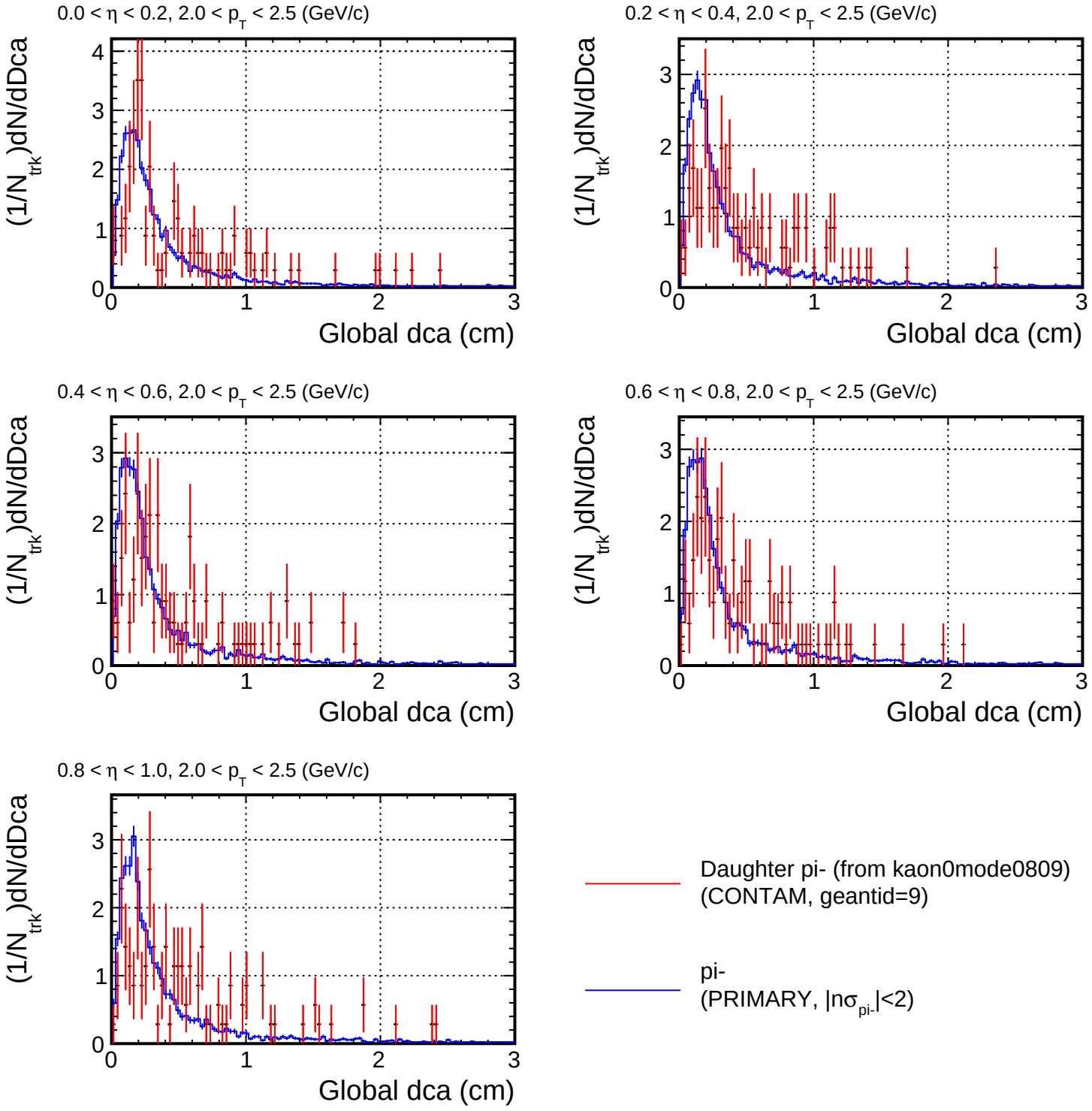
Dca distribution for (p_T, η) slices



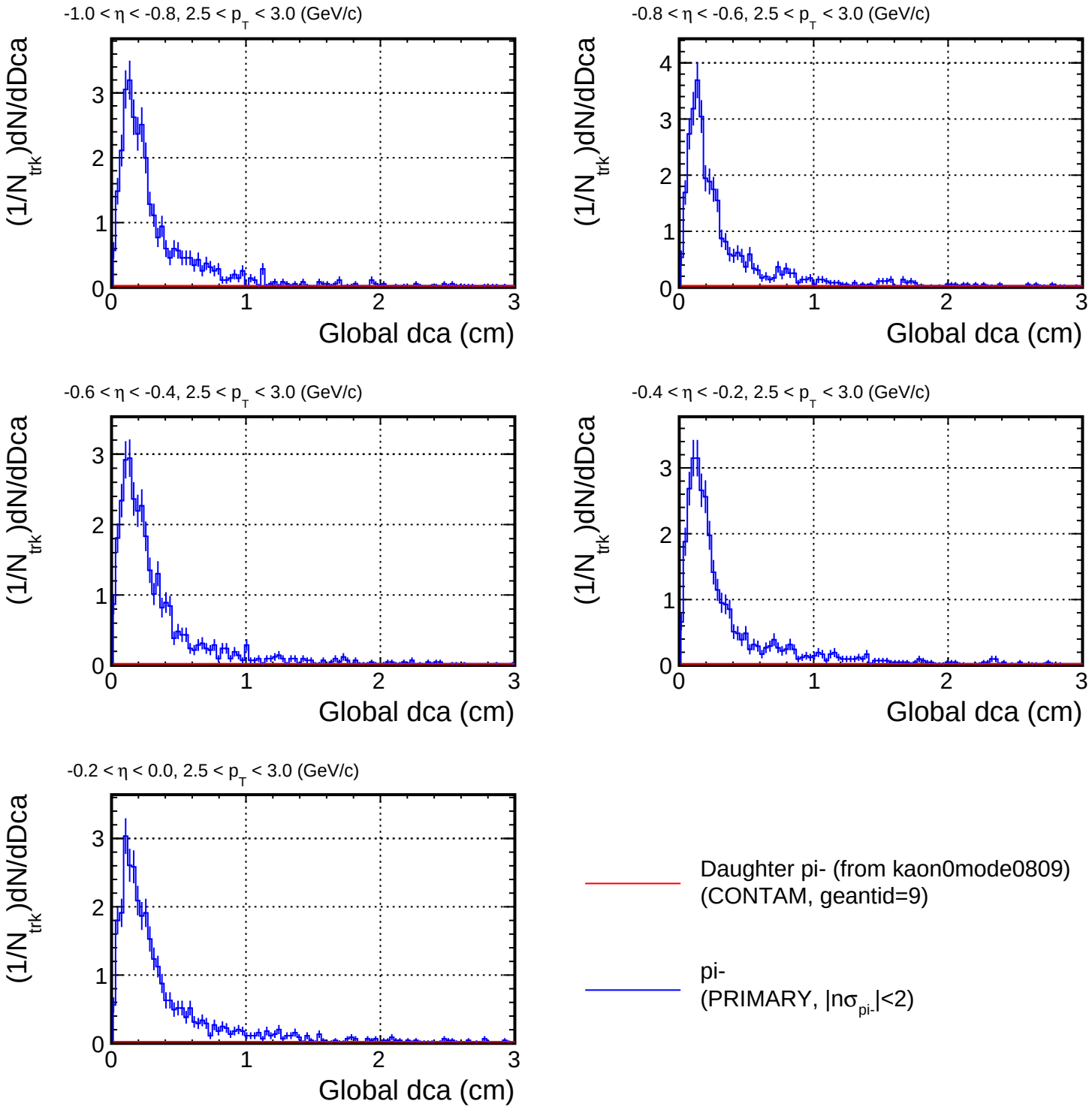
Dca distribution for (p_T, η) slices



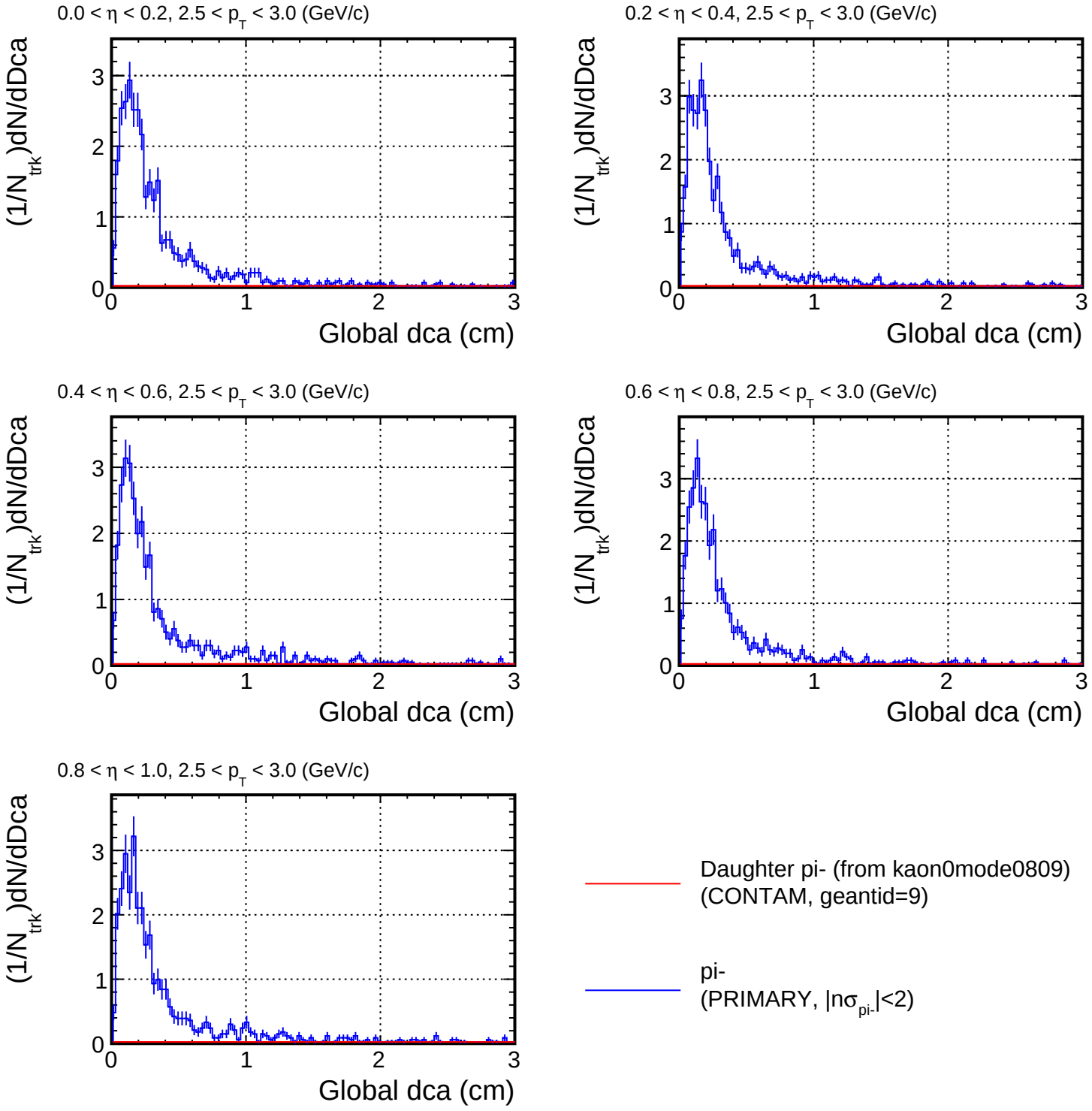
Dca distribution for (p_T, η) slices



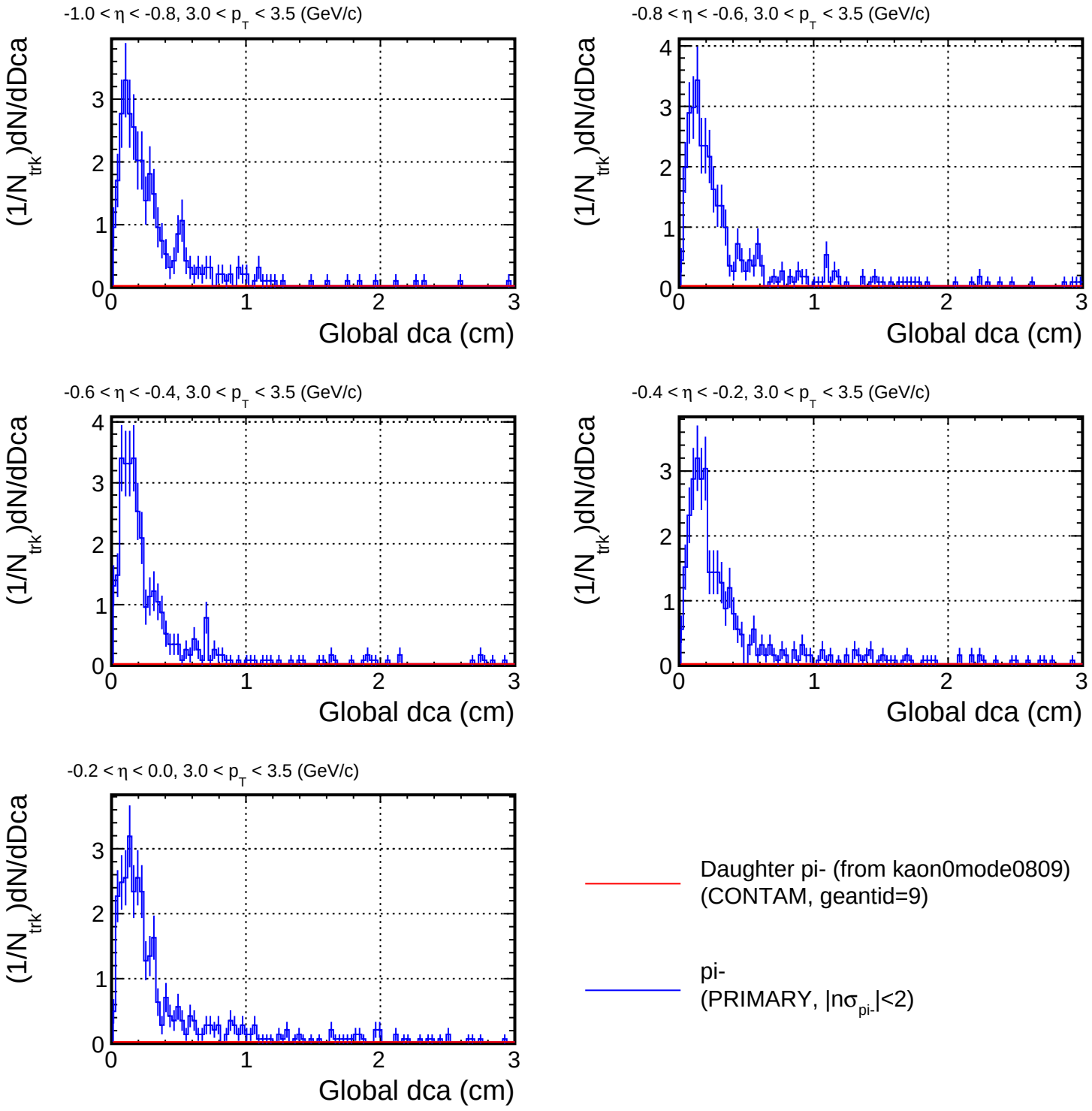
Dca distribution for (p_T, η) slices



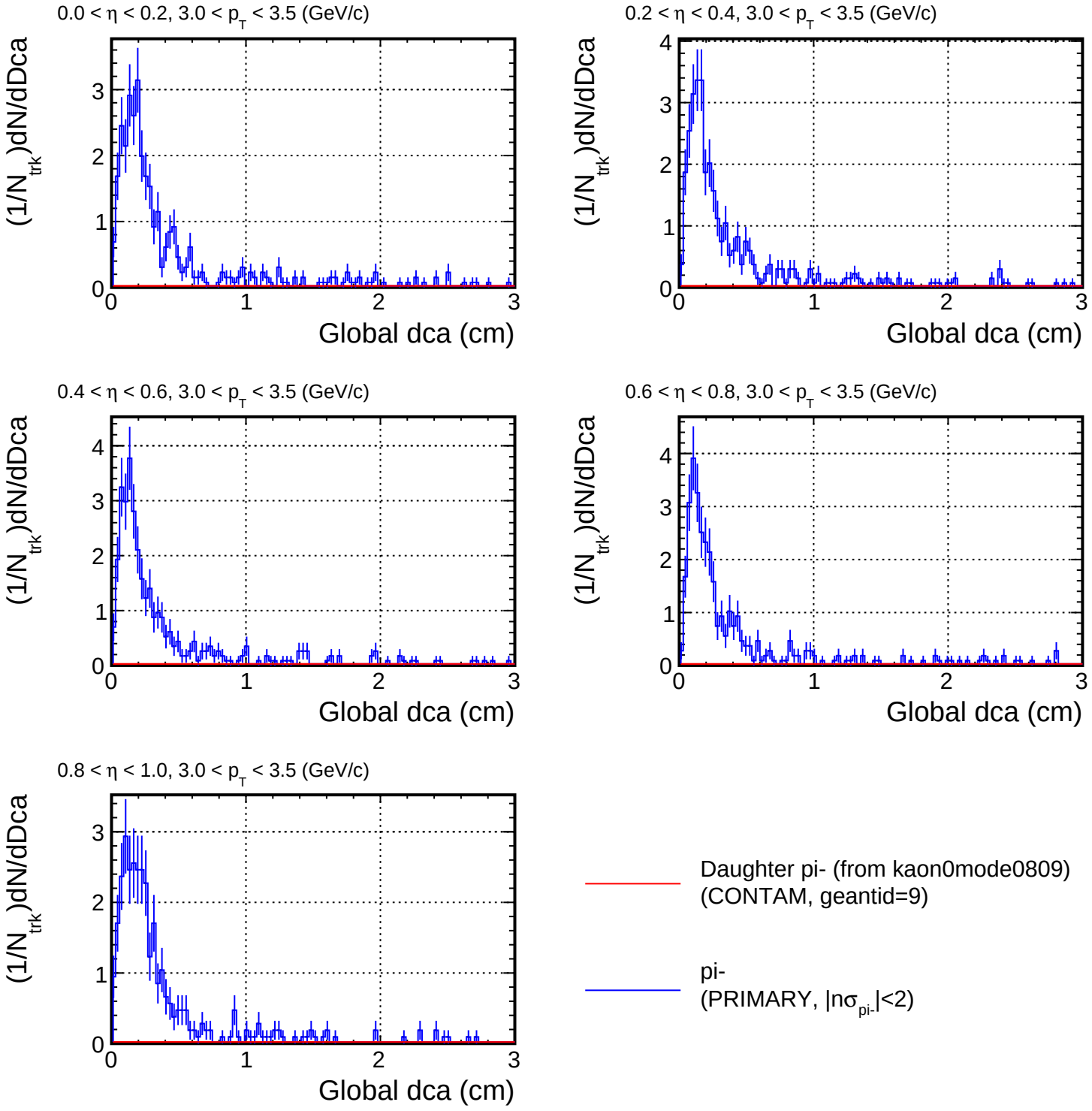
Dca distribution for (p_T, η) slices



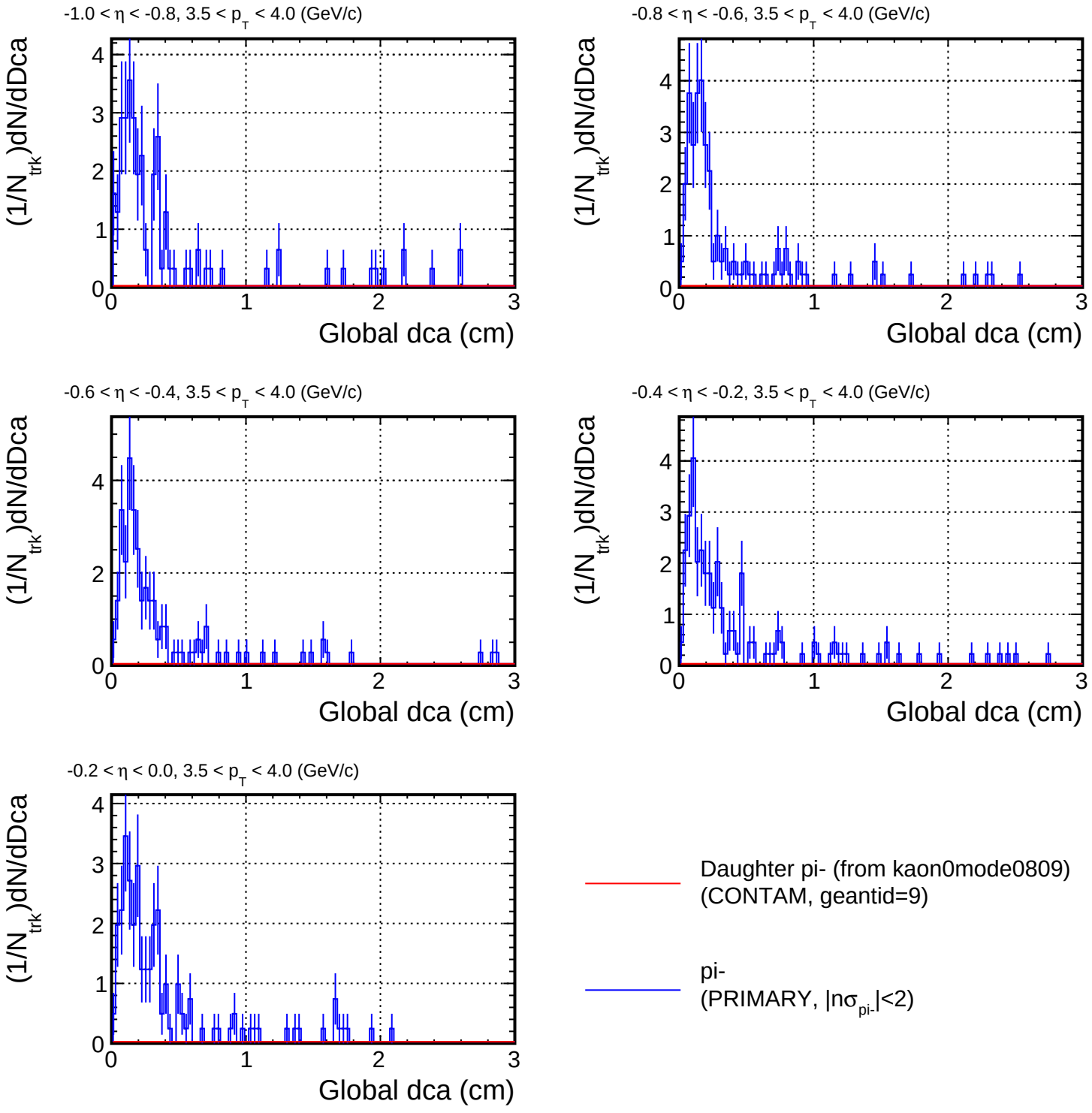
Dca distribution for (p_T, η) slices



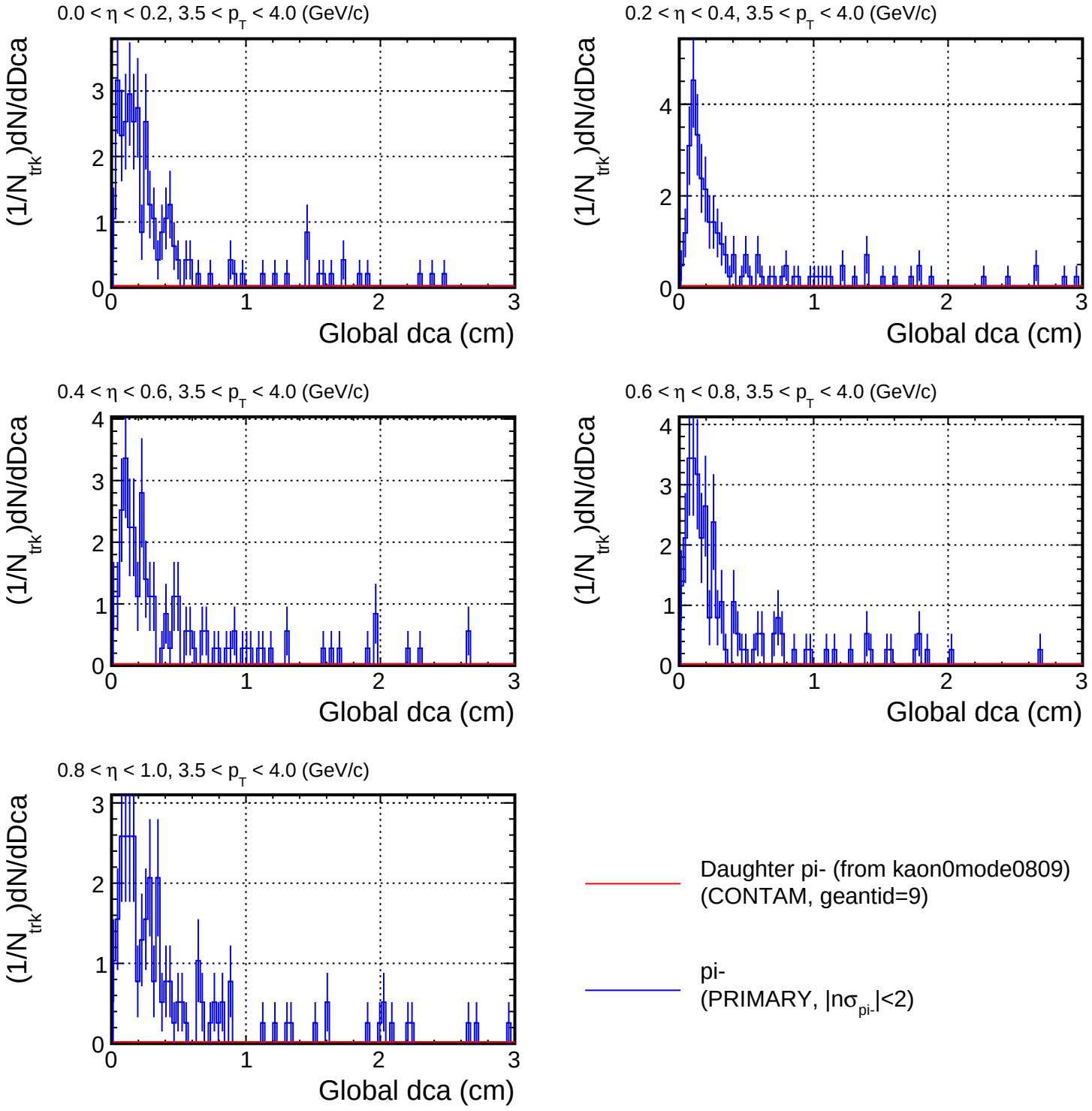
Dca distribution for (p_T, η) slices



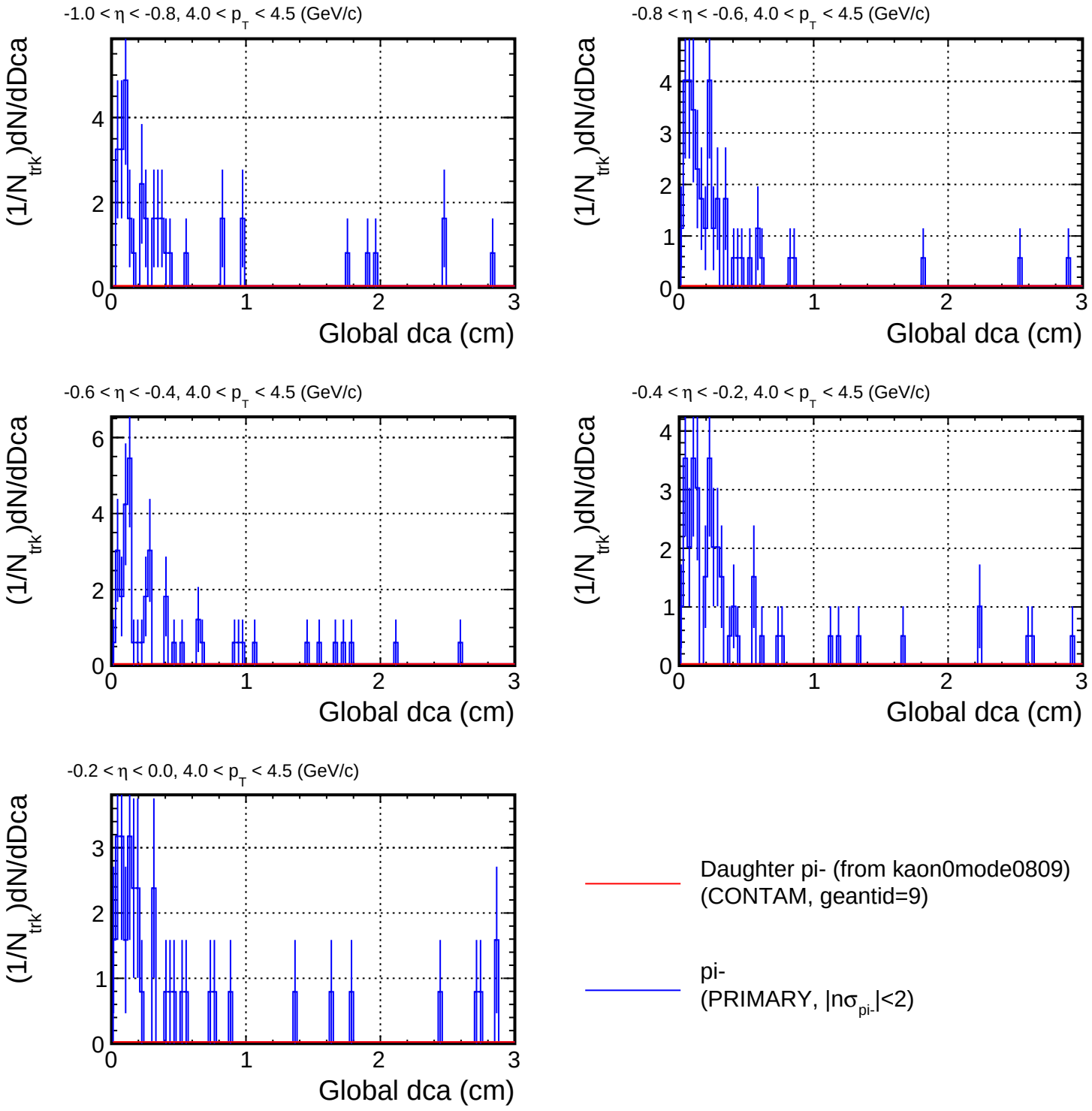
Dca distribution for (p_T, η) slices



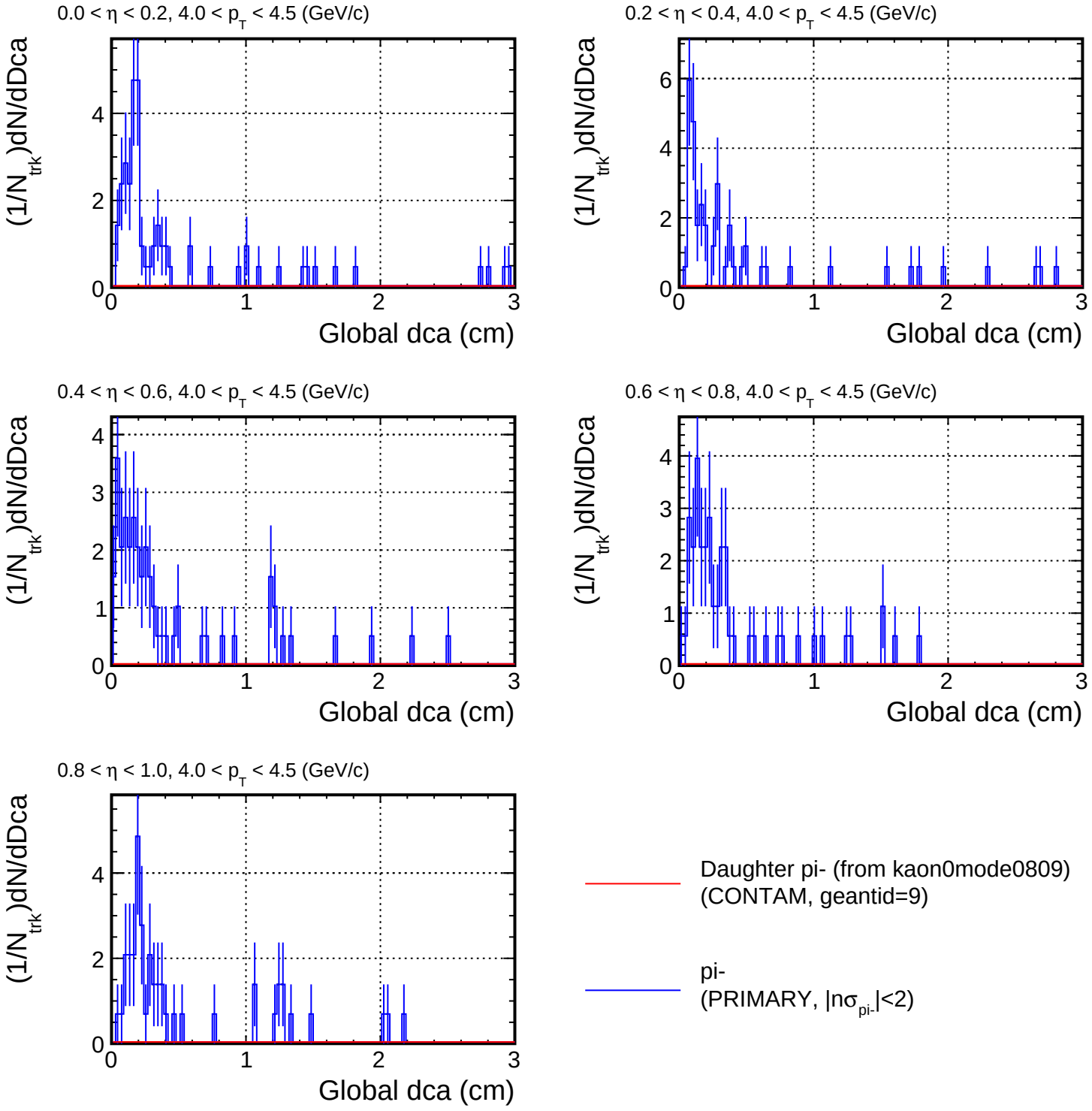
Dca distribution for (p_T, η) slices



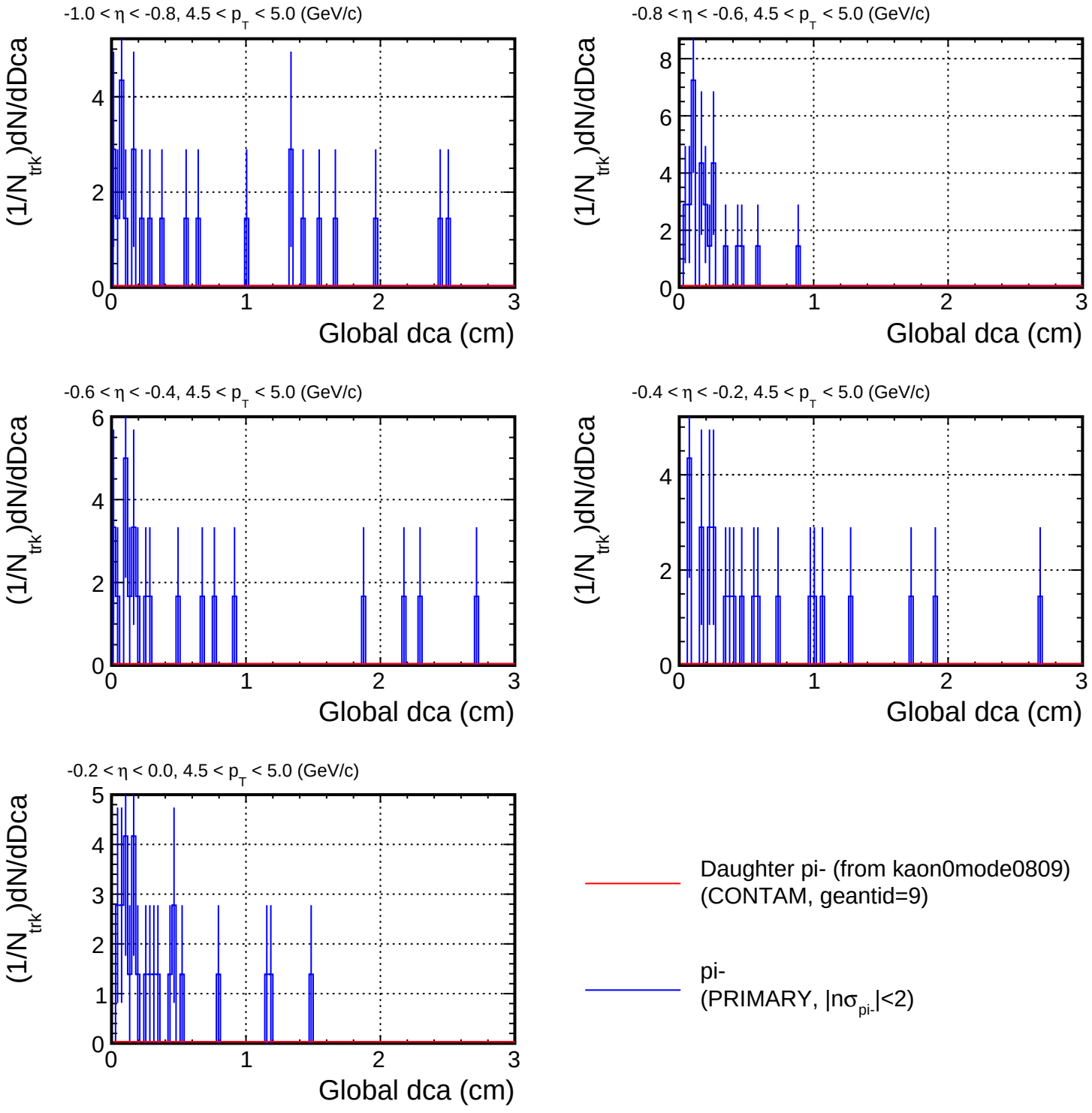
Dca distribution for (p_T, η) slices



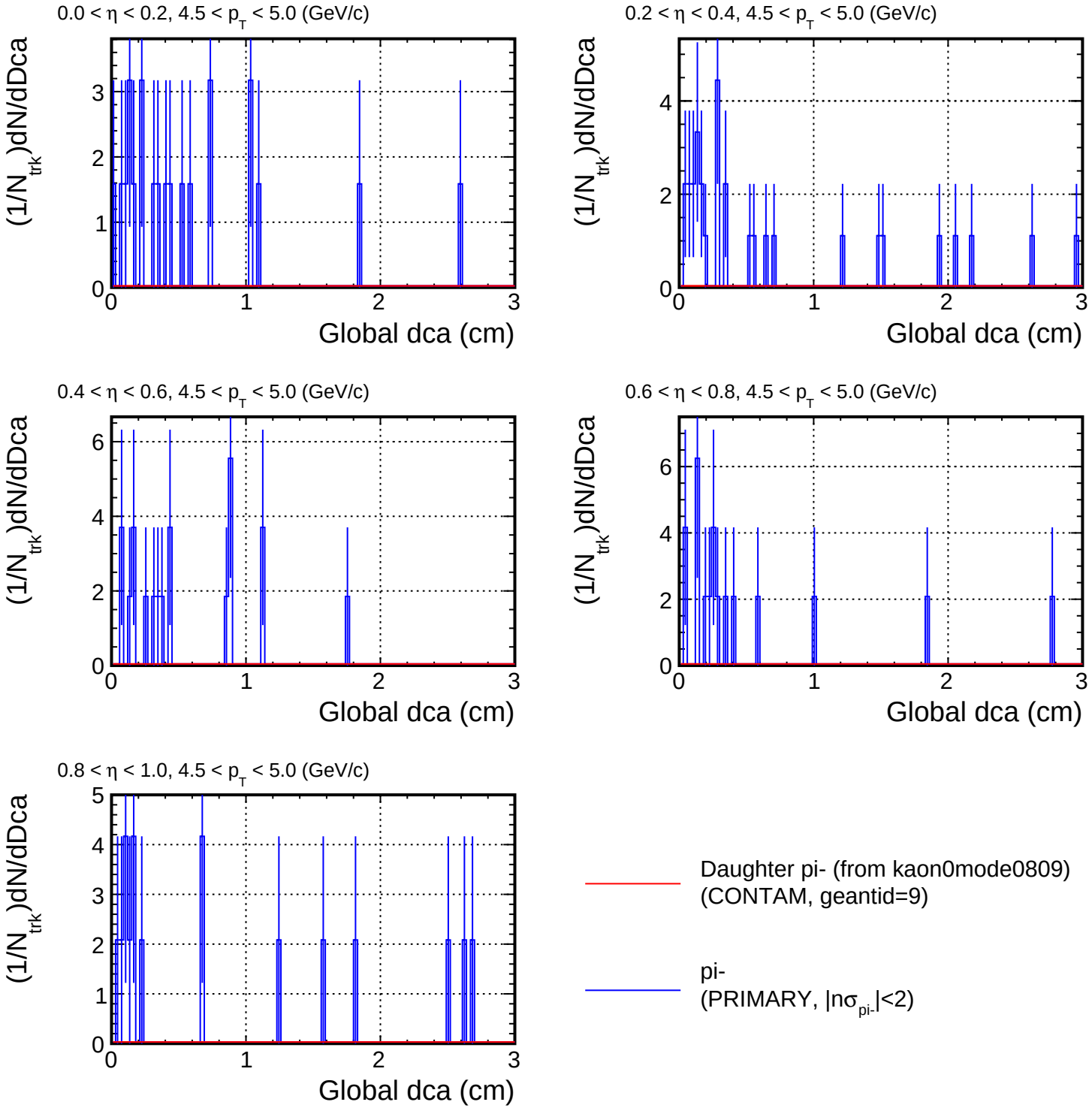
Dca distribution for (p_T, η) slices



Dca distribution for (p_T, η) slices

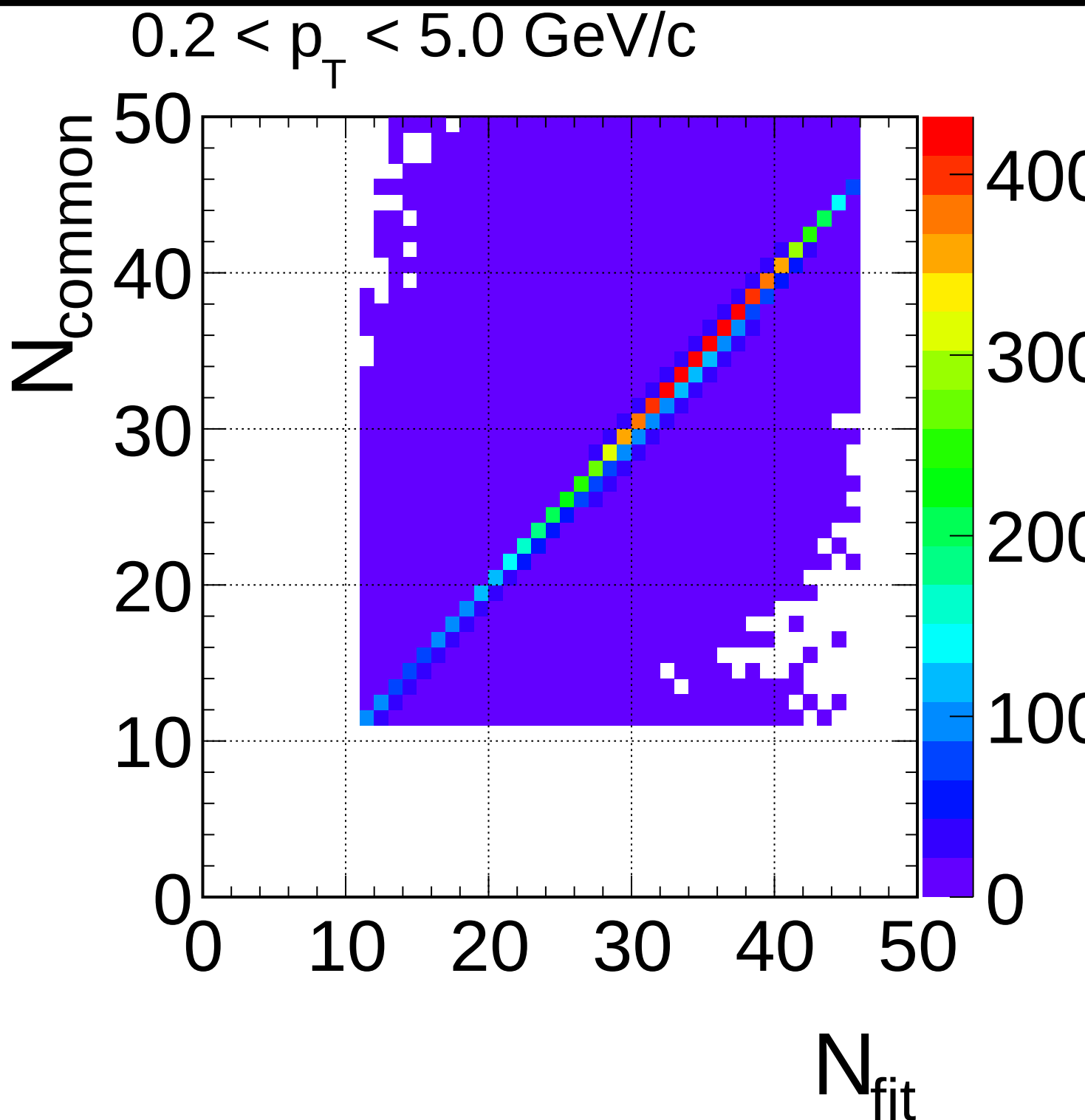


Dca distribution for (p_T, η) slices

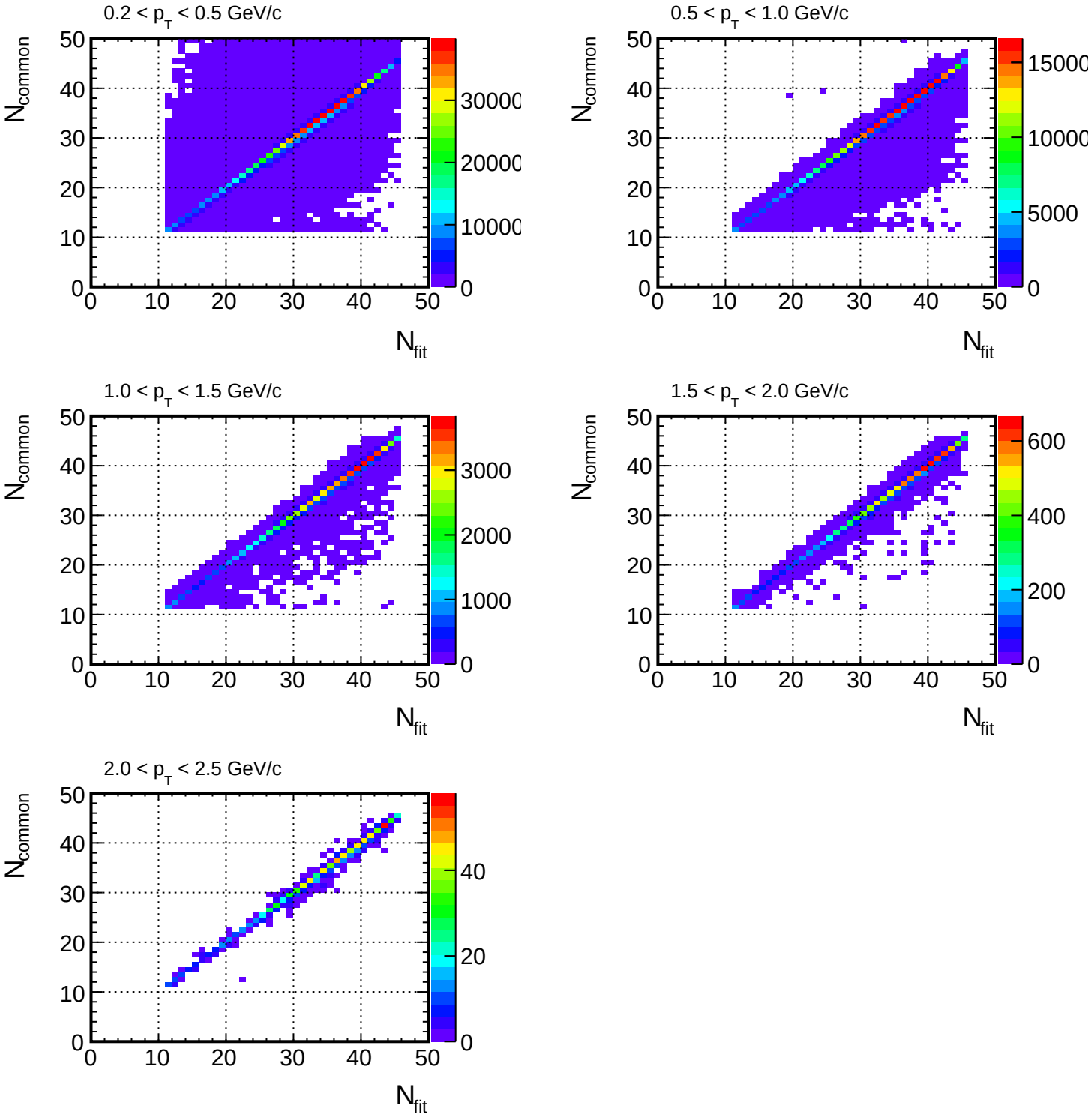


N_{events}=319.99 K, MC=kaon0mode0809, P11id, (2011) *Wed Jan 14 20:17:54 2015*

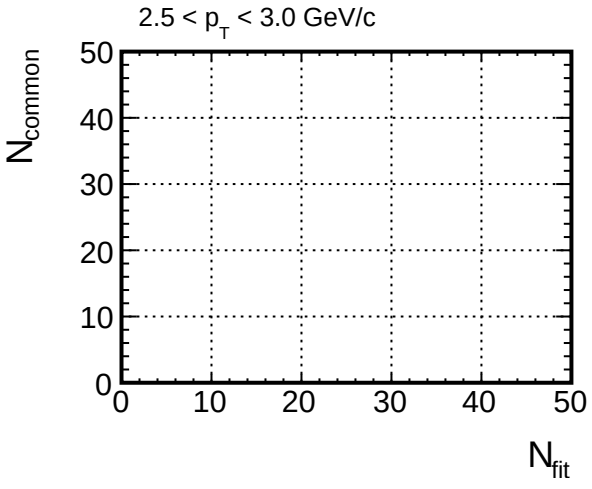
N_{common} vs N_{hit} (Embedding:pi+, Real:pi+)

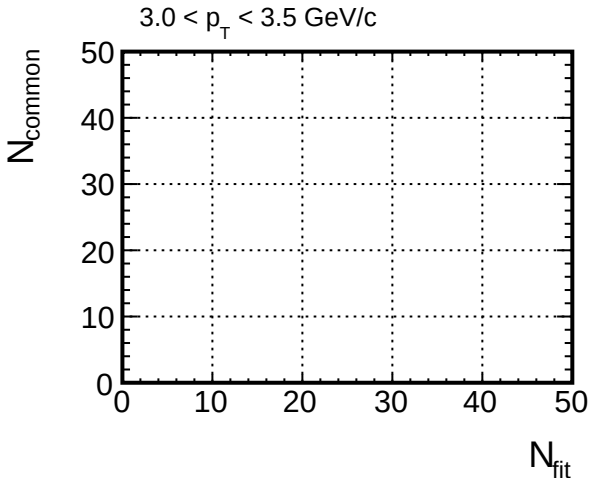


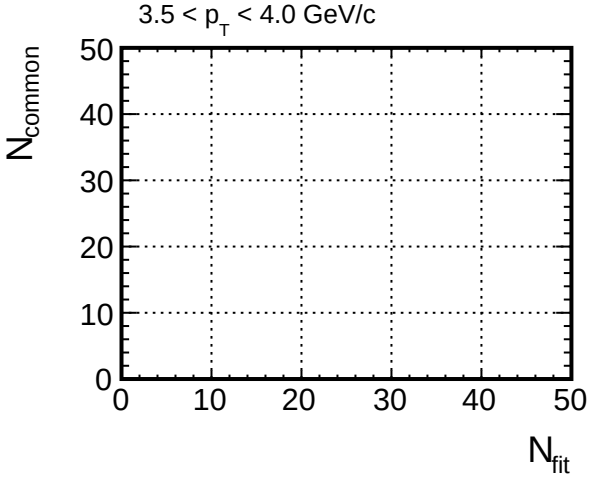
N_{common} vs N_{hit}, p_T dependence (Embedding:pi+, Real:pi+)

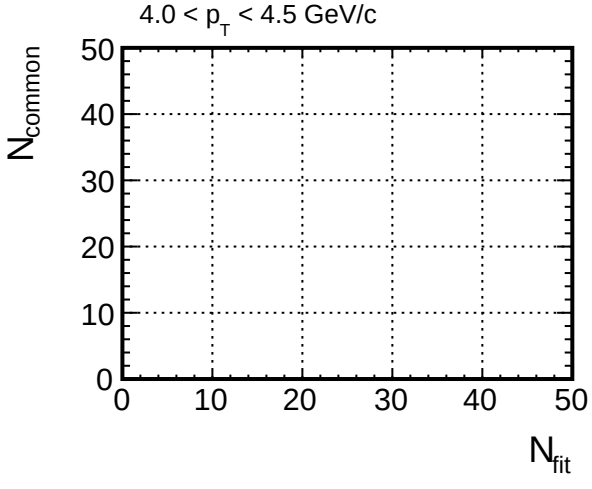


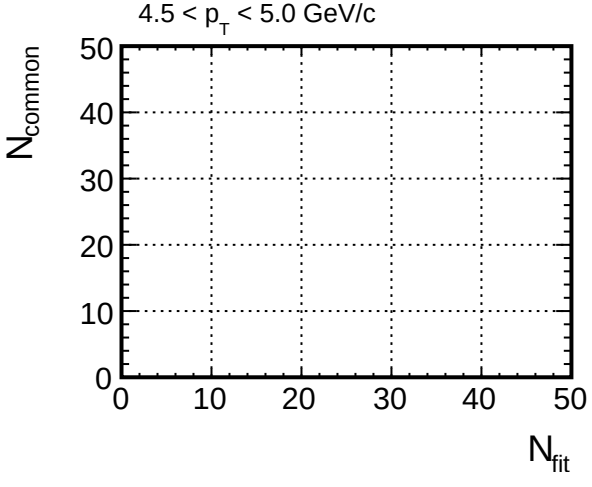
N_{common} vs N_{hit}, p_T dependence (Embedding:pi+, Real:pi+)



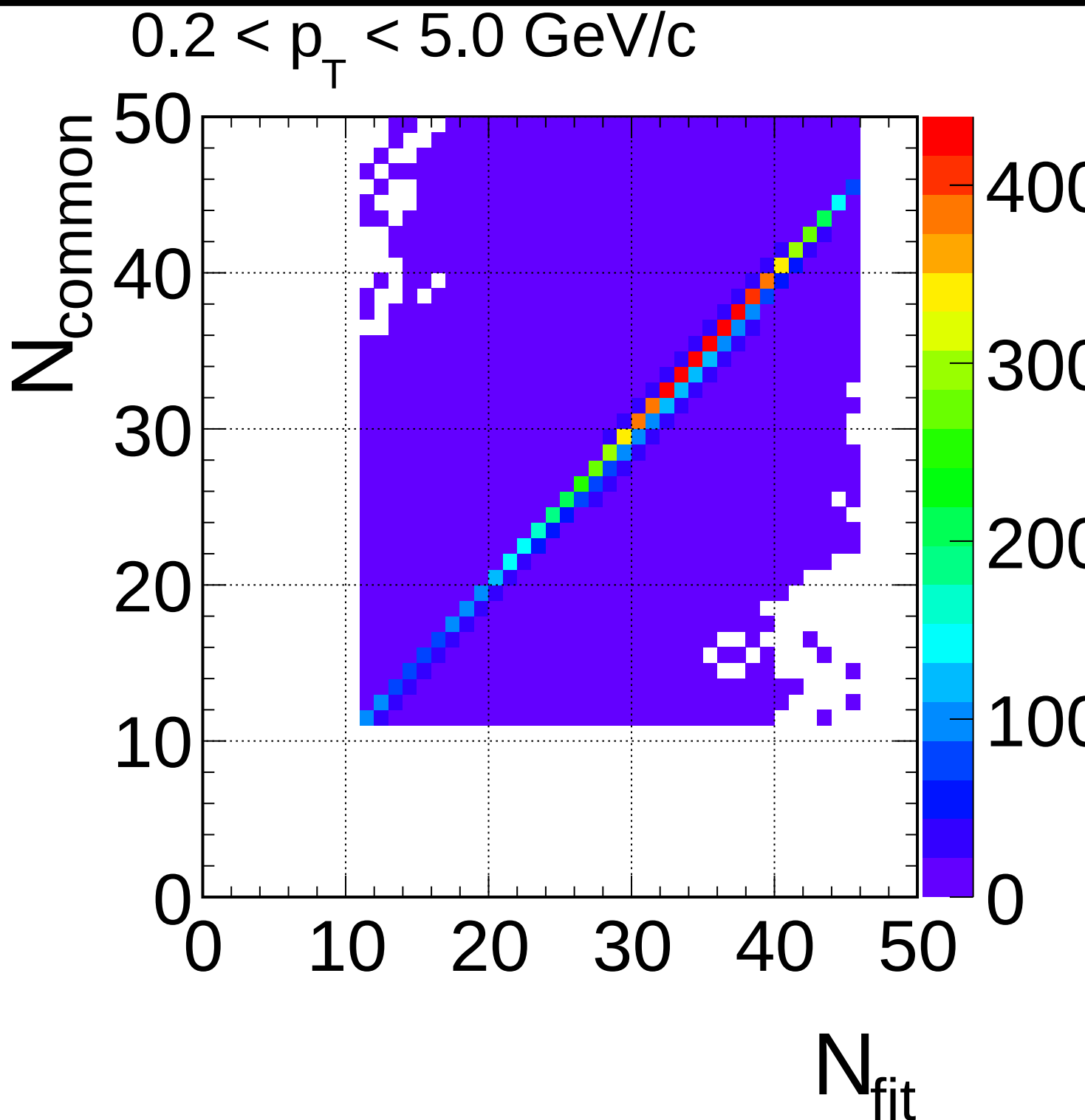




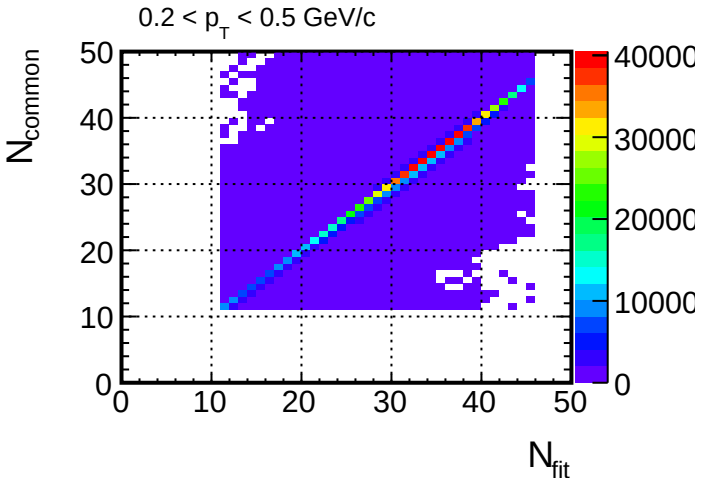


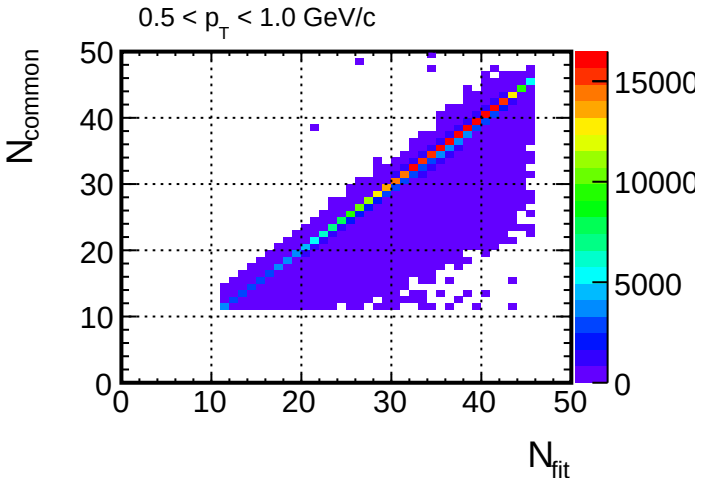


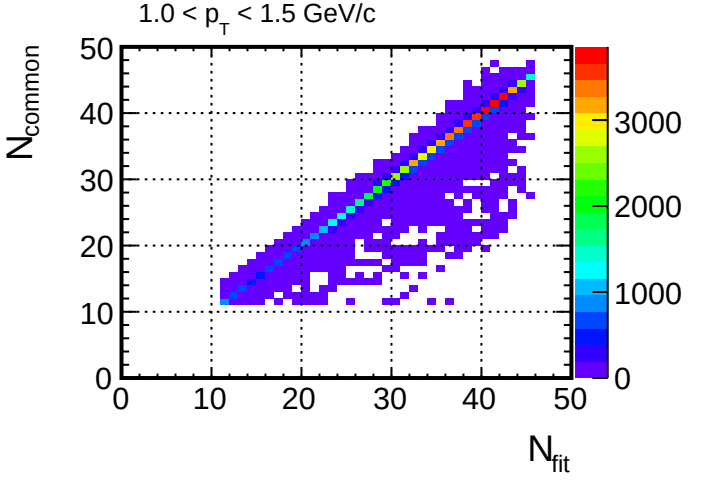
N_{common} vs N_{hit} (Embedding:pi-, Real:pi-)

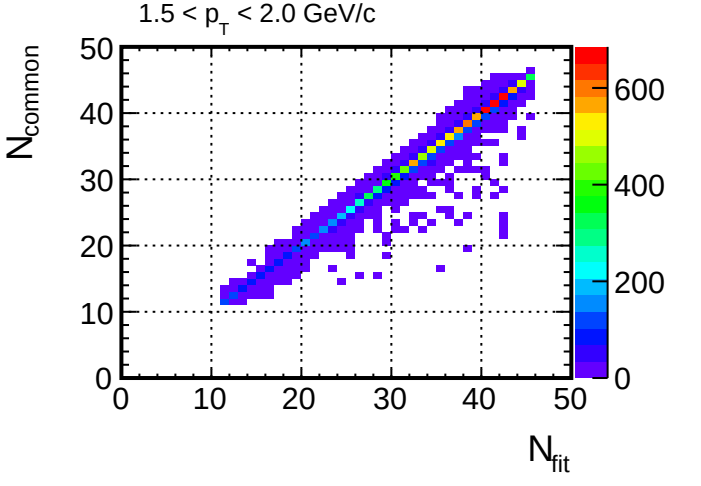


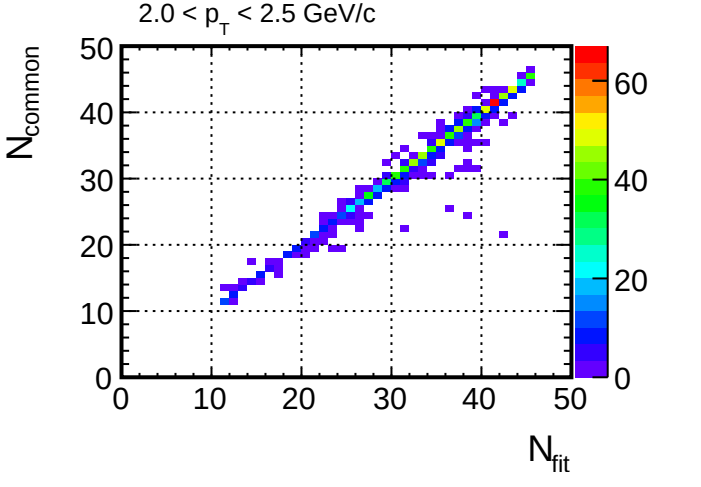
N_{common} vs N_{hit}, p_T dependence (Embedding:pi-, Real:pi-)



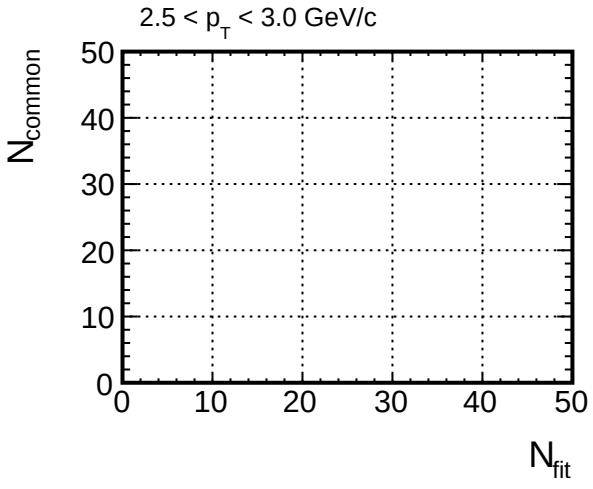


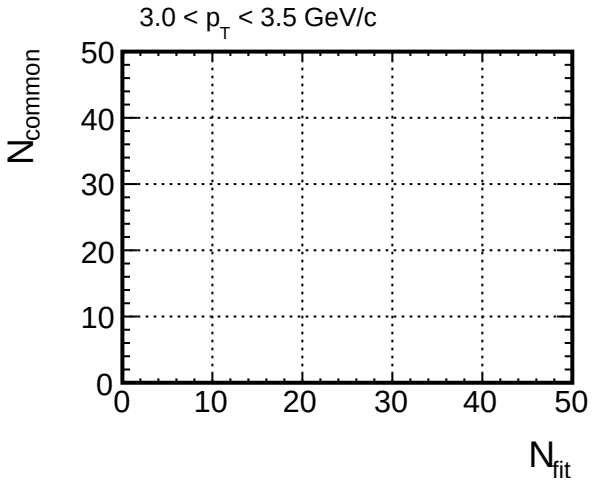


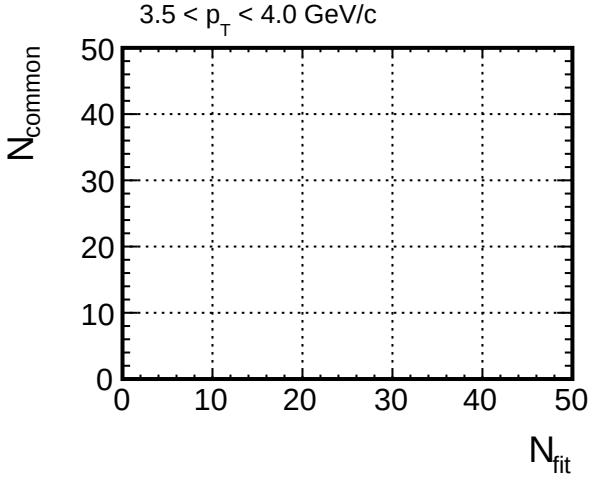


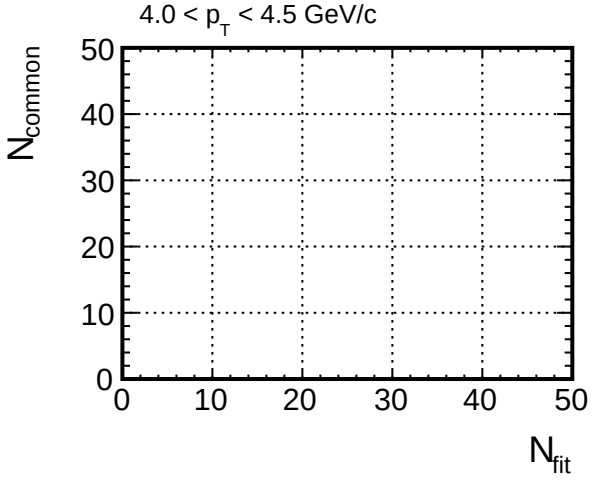


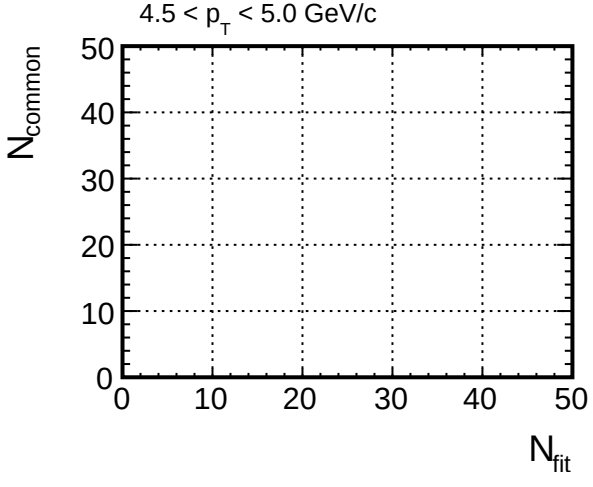
N_{common} vs N_{hit}, p_T dependence (Embedding:pi-, Real:pi-)



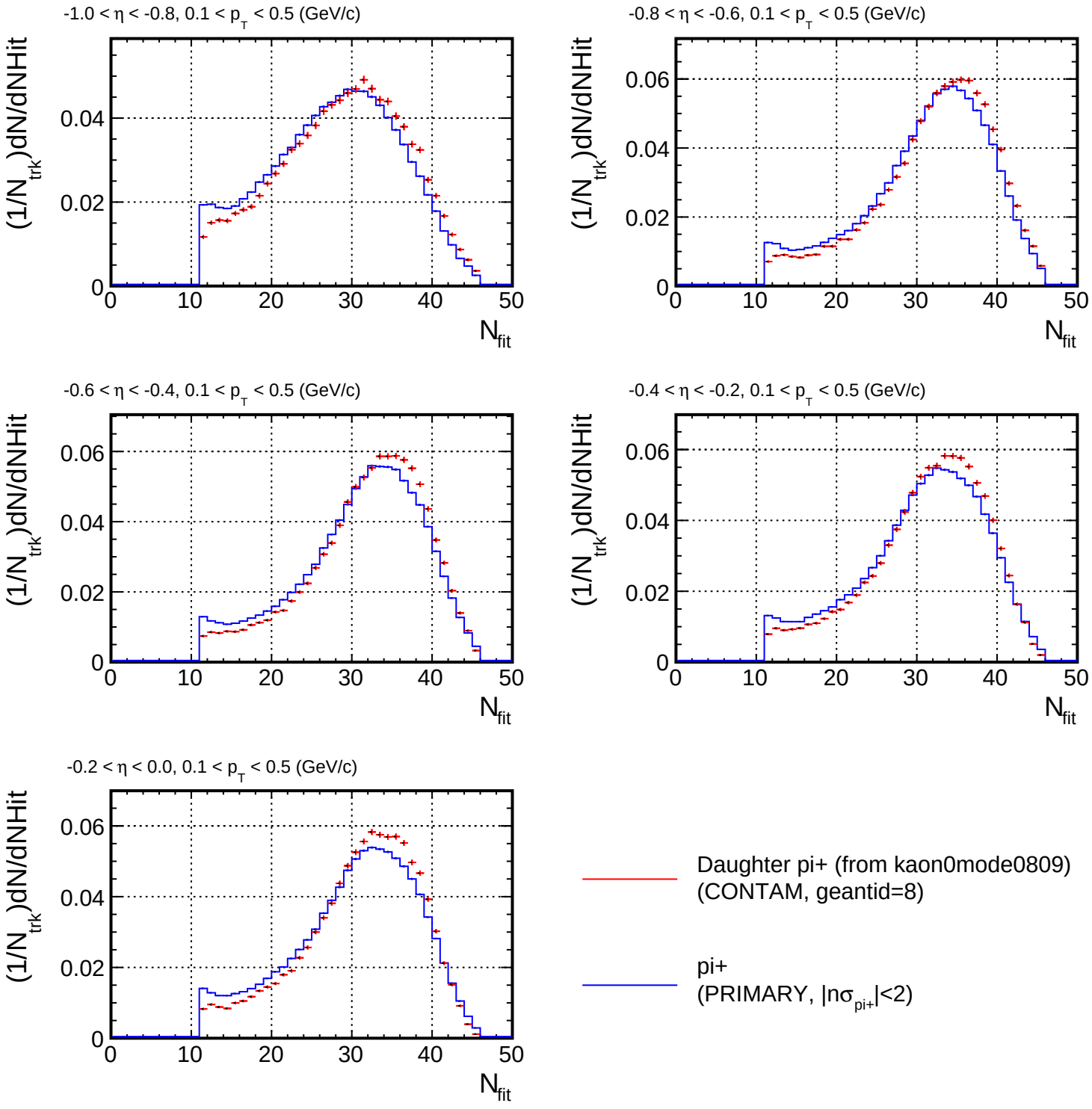




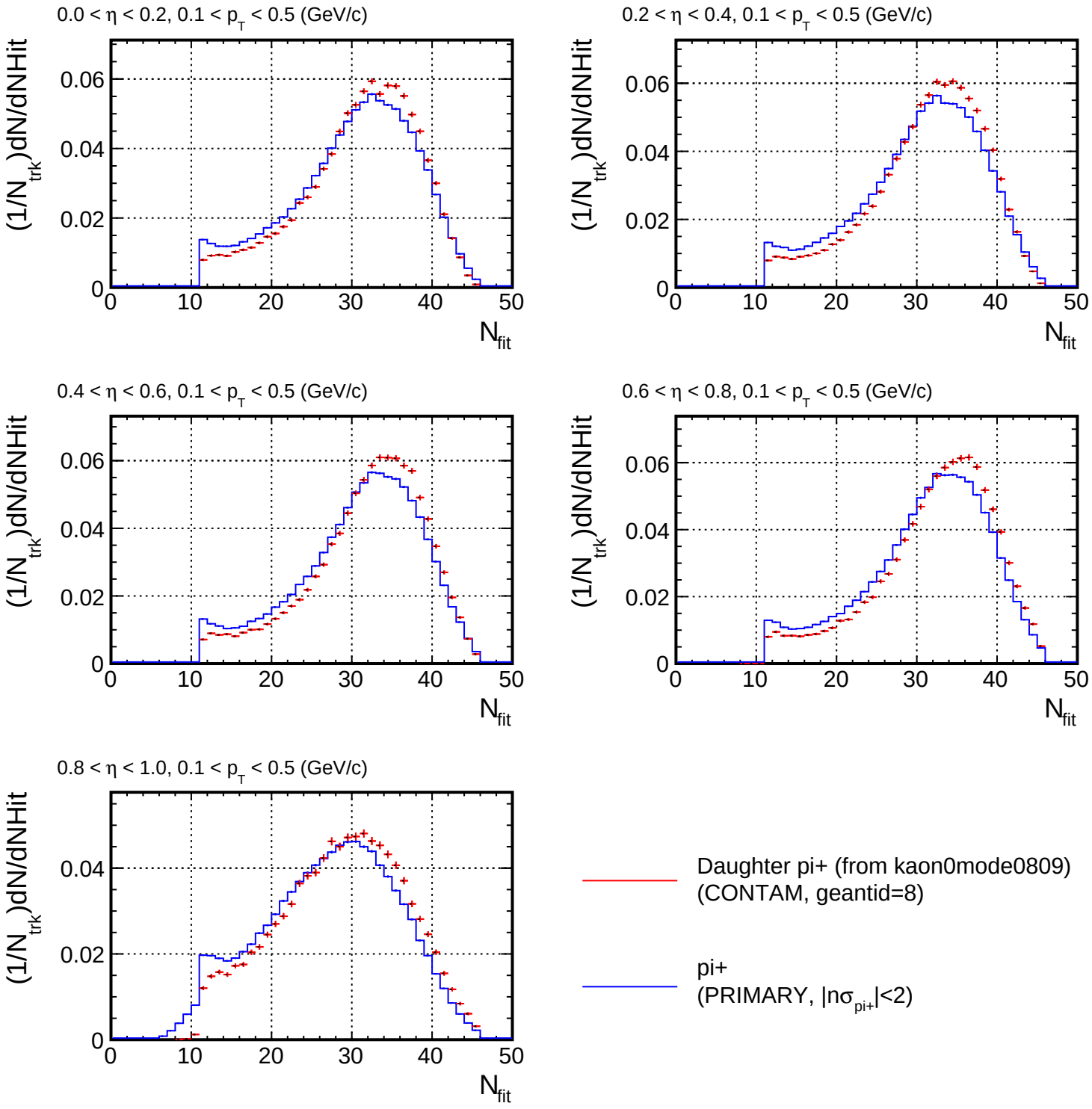




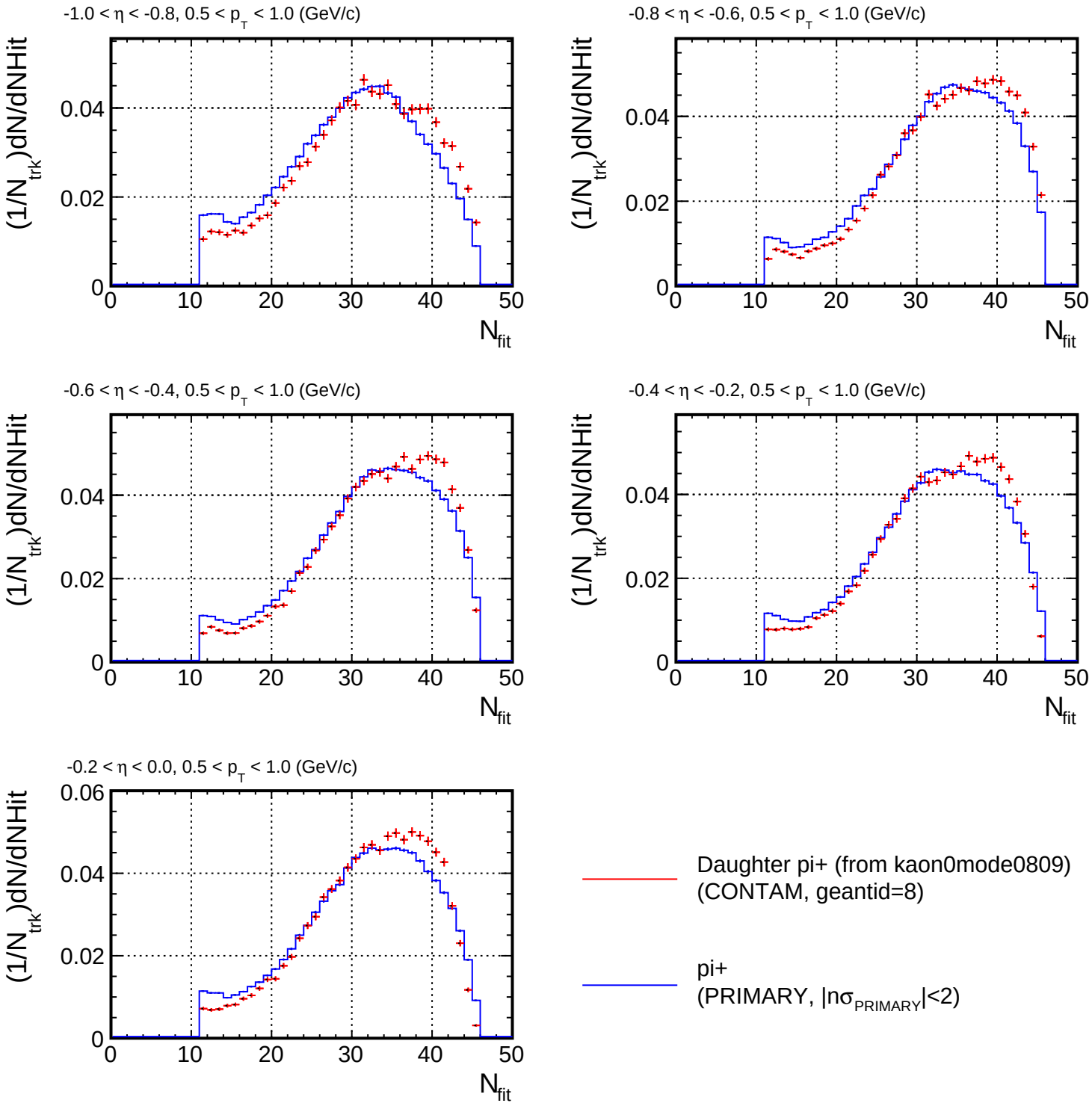
NHit distribution for (p_T, η) slices



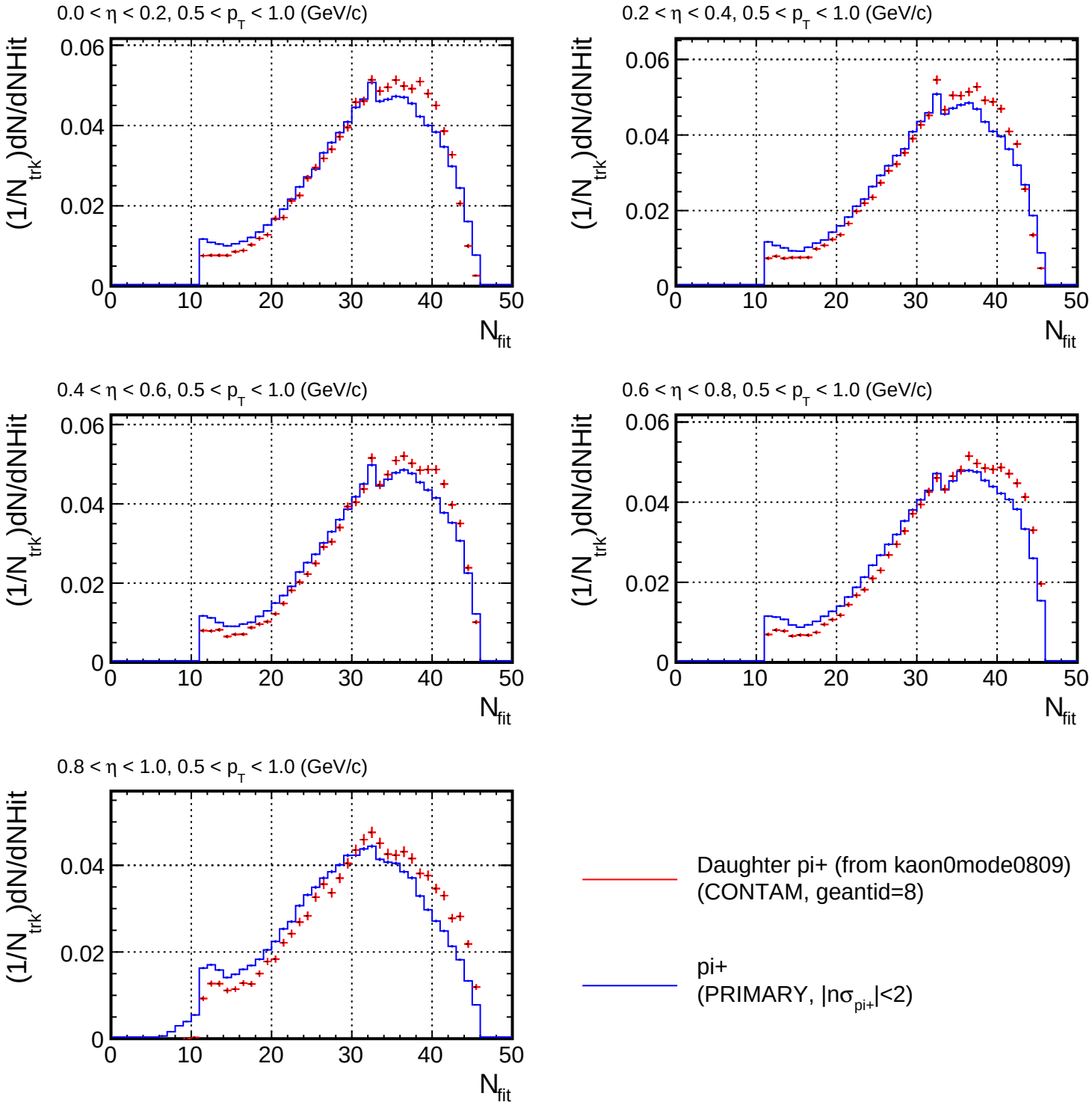
NHit distribution for (p_T, η) slices



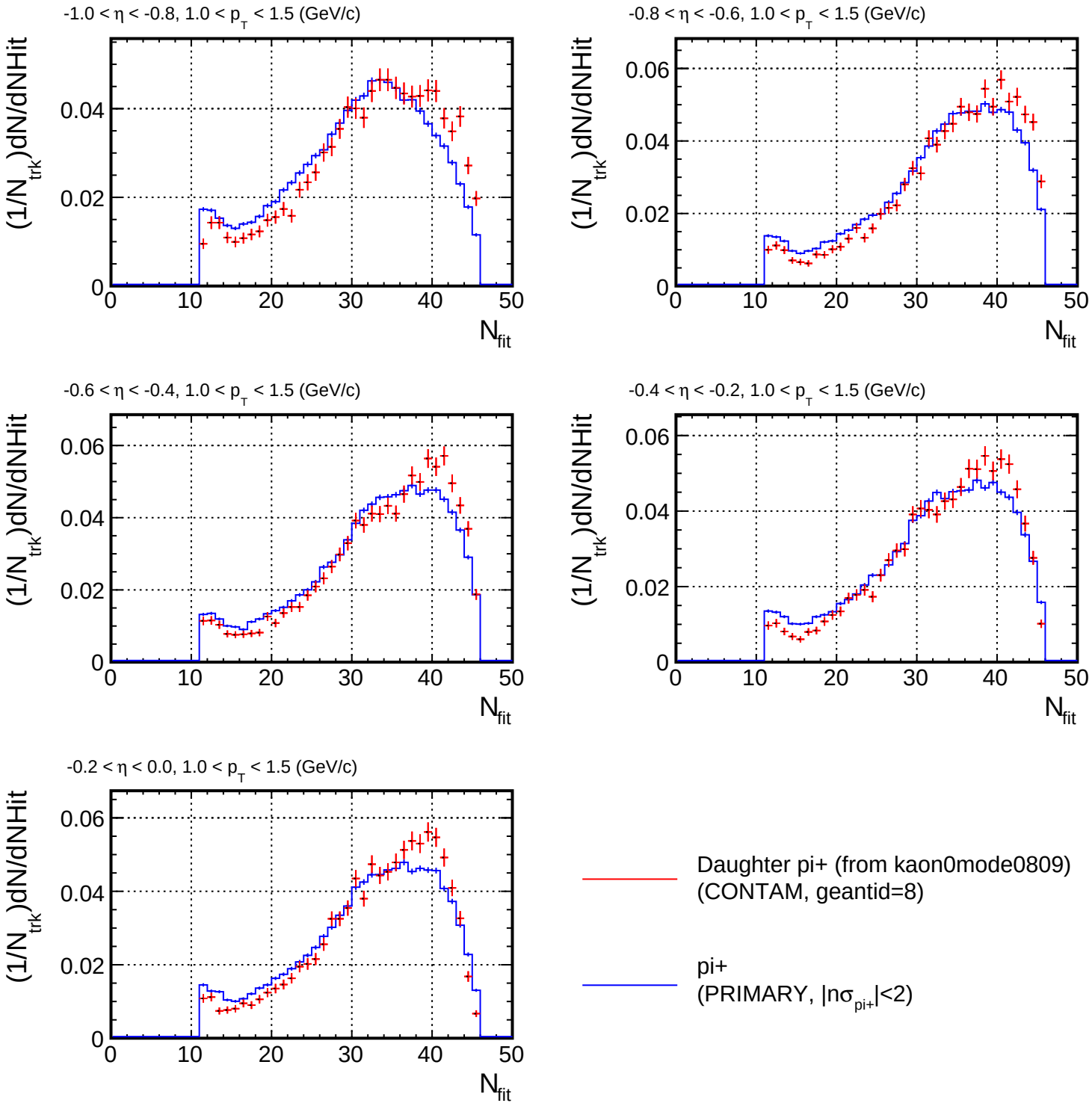
NHit distribution for (p_T, η) slices



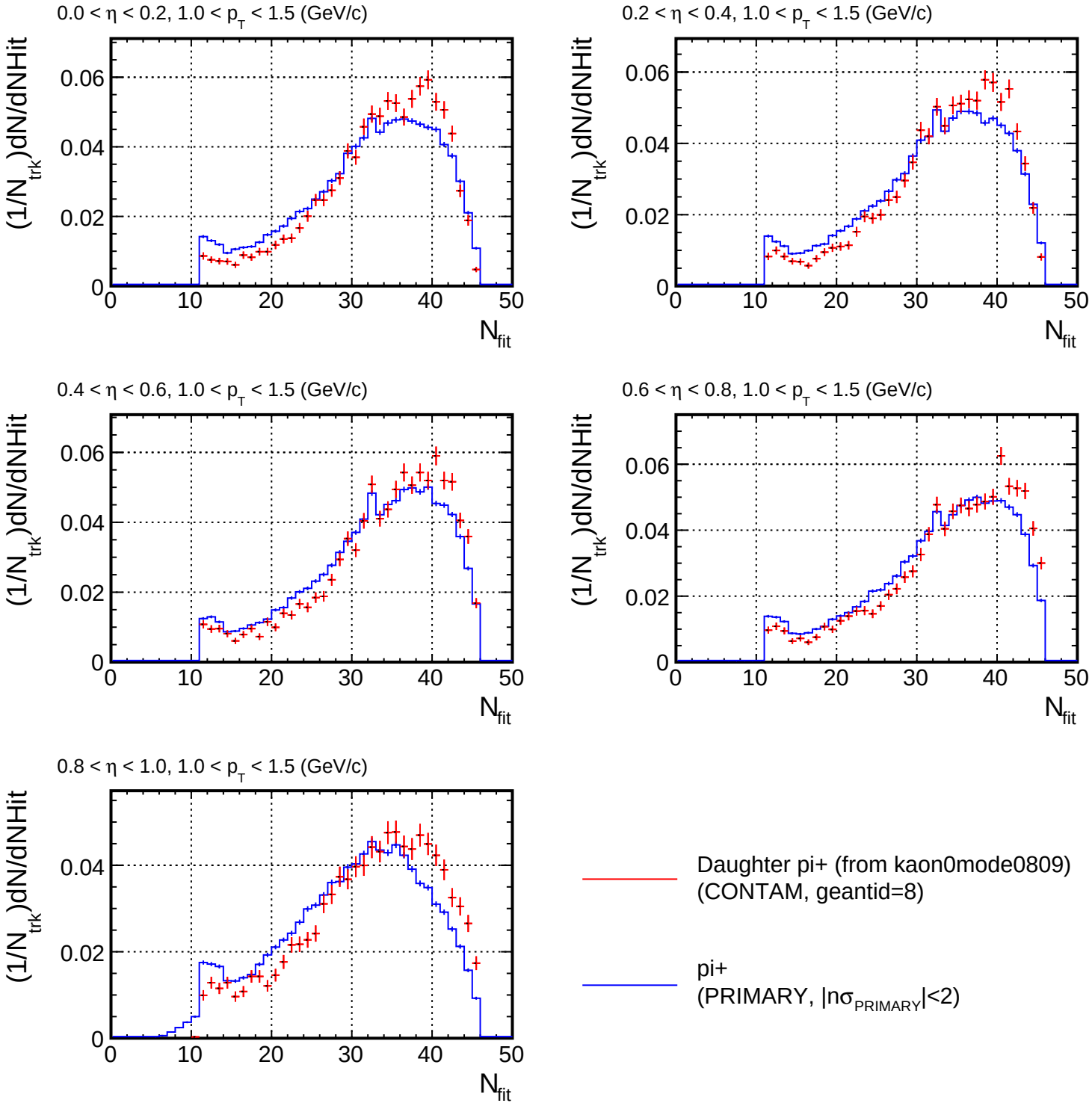
NHit distribution for (p_T, η) slices



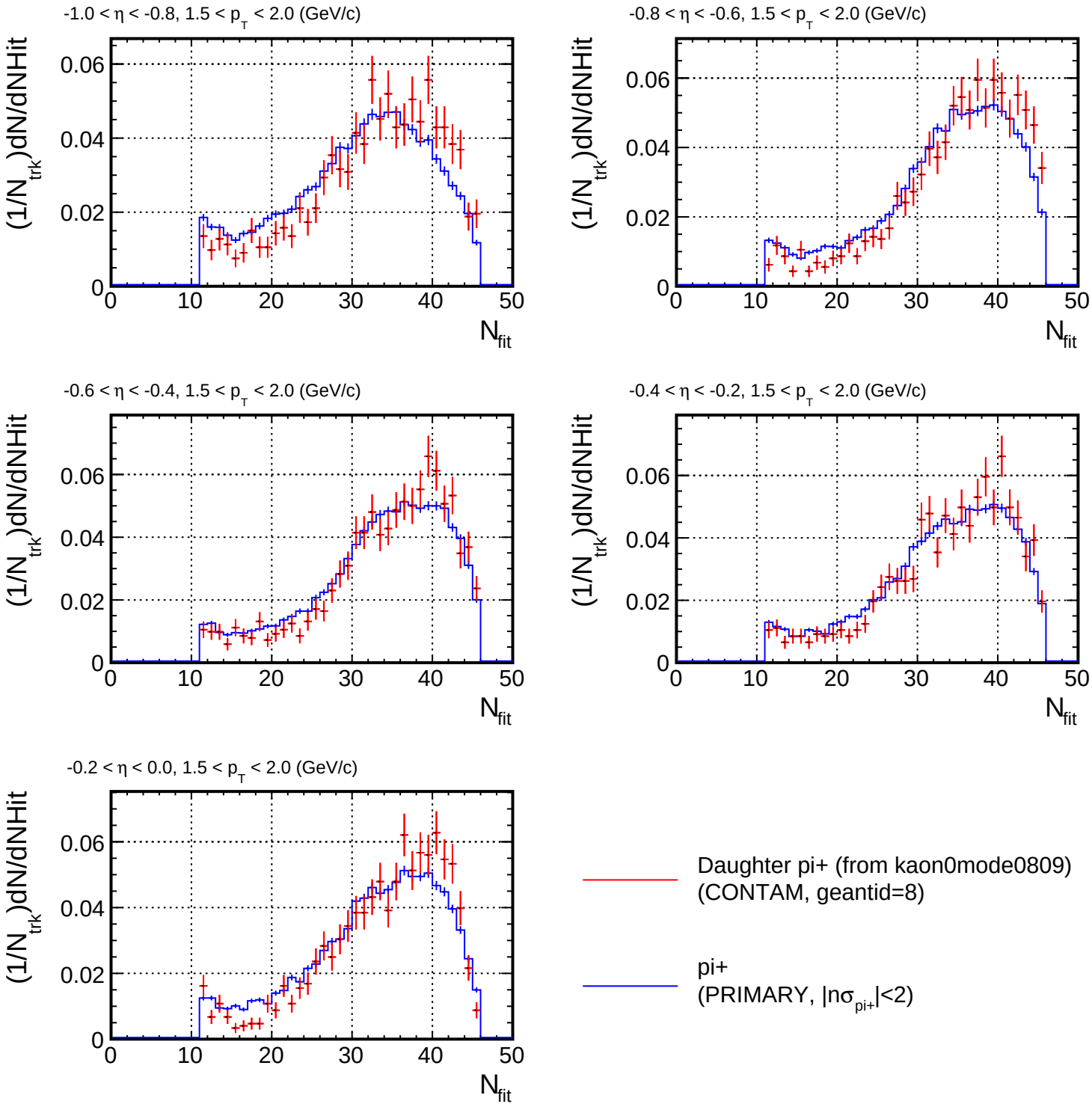
NHit distribution for (p_T, η) slices



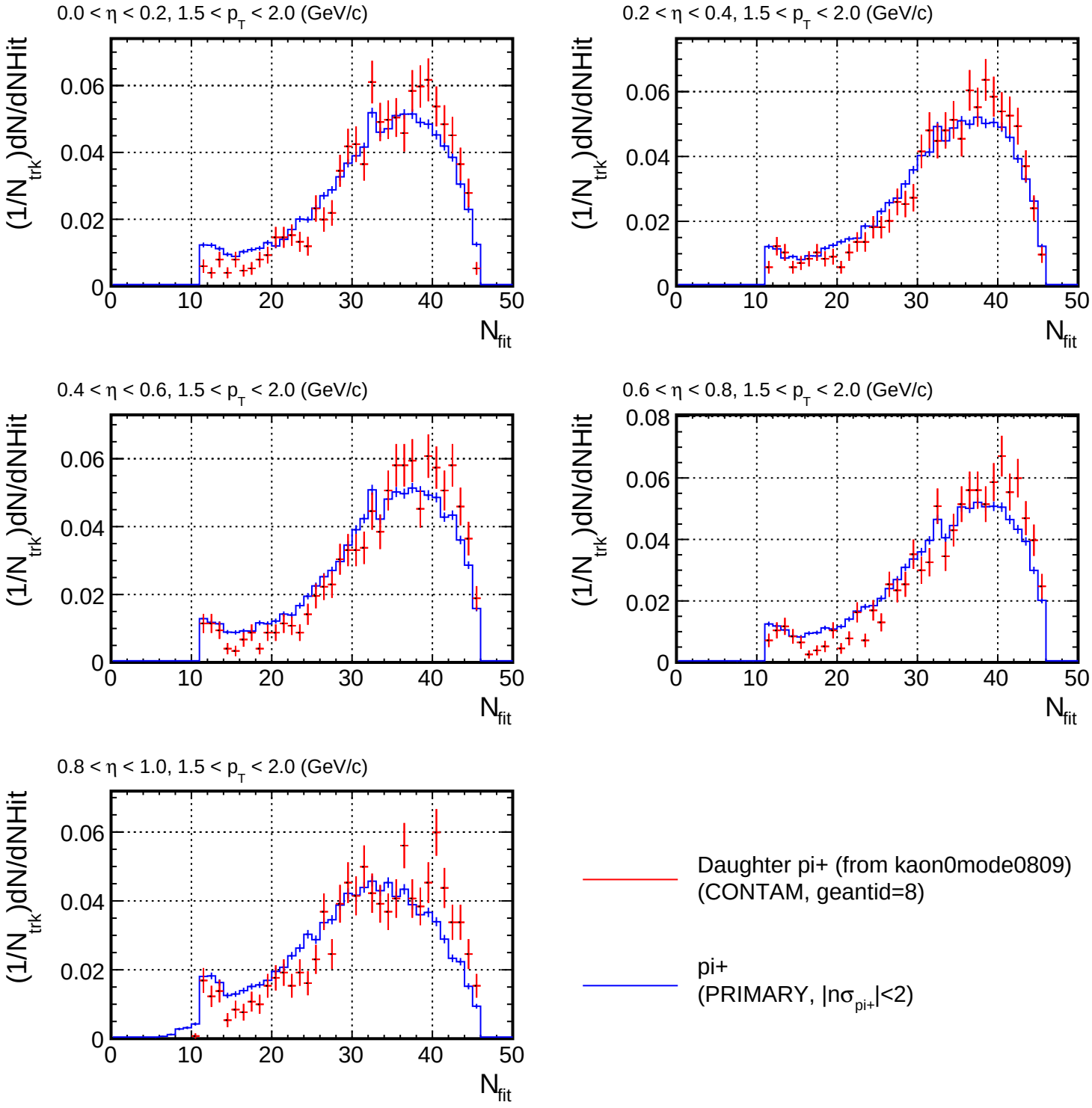
NHit distribution for (p_T, η) slices



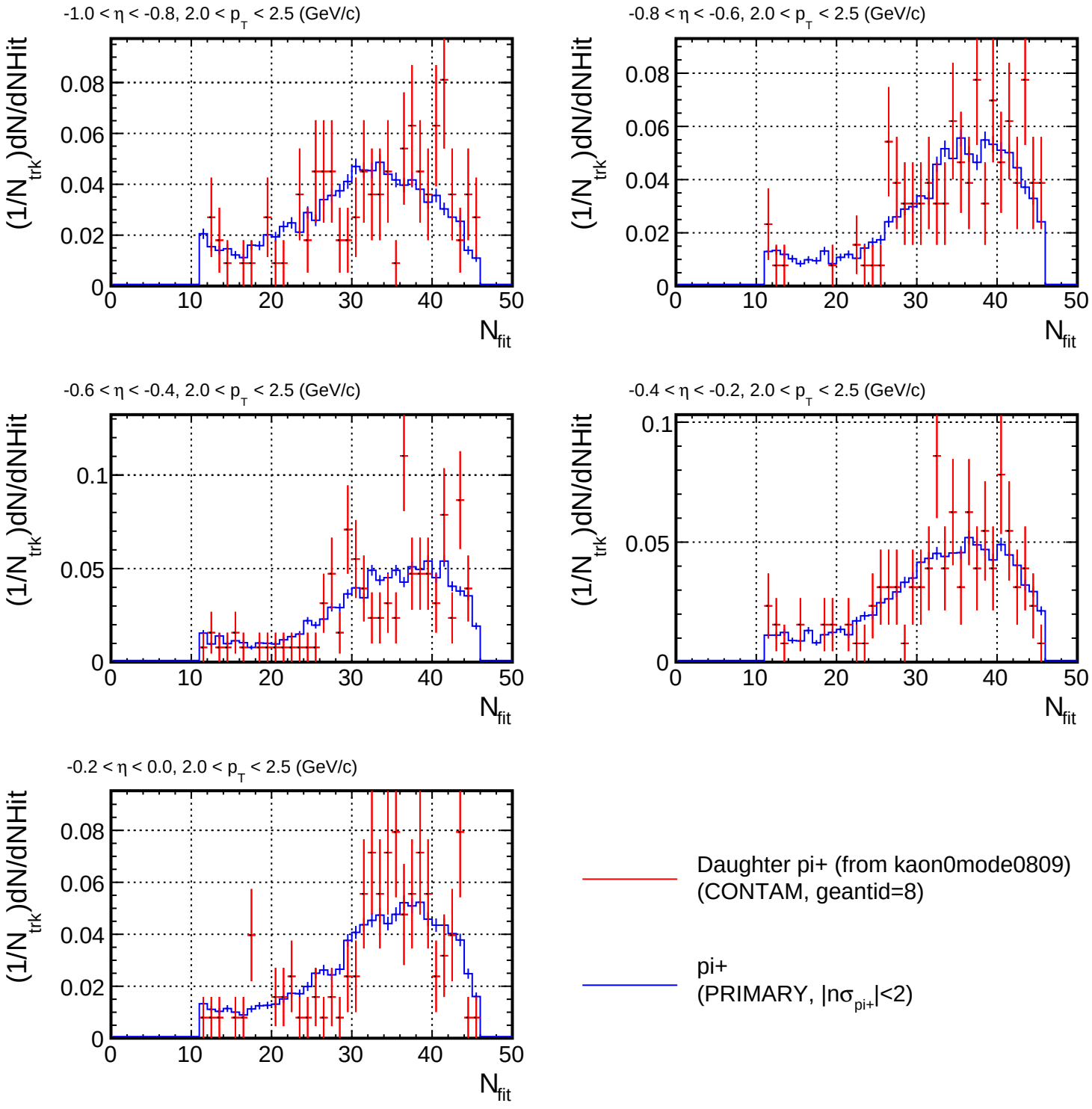
NHit distribution for (p_T, η) slices



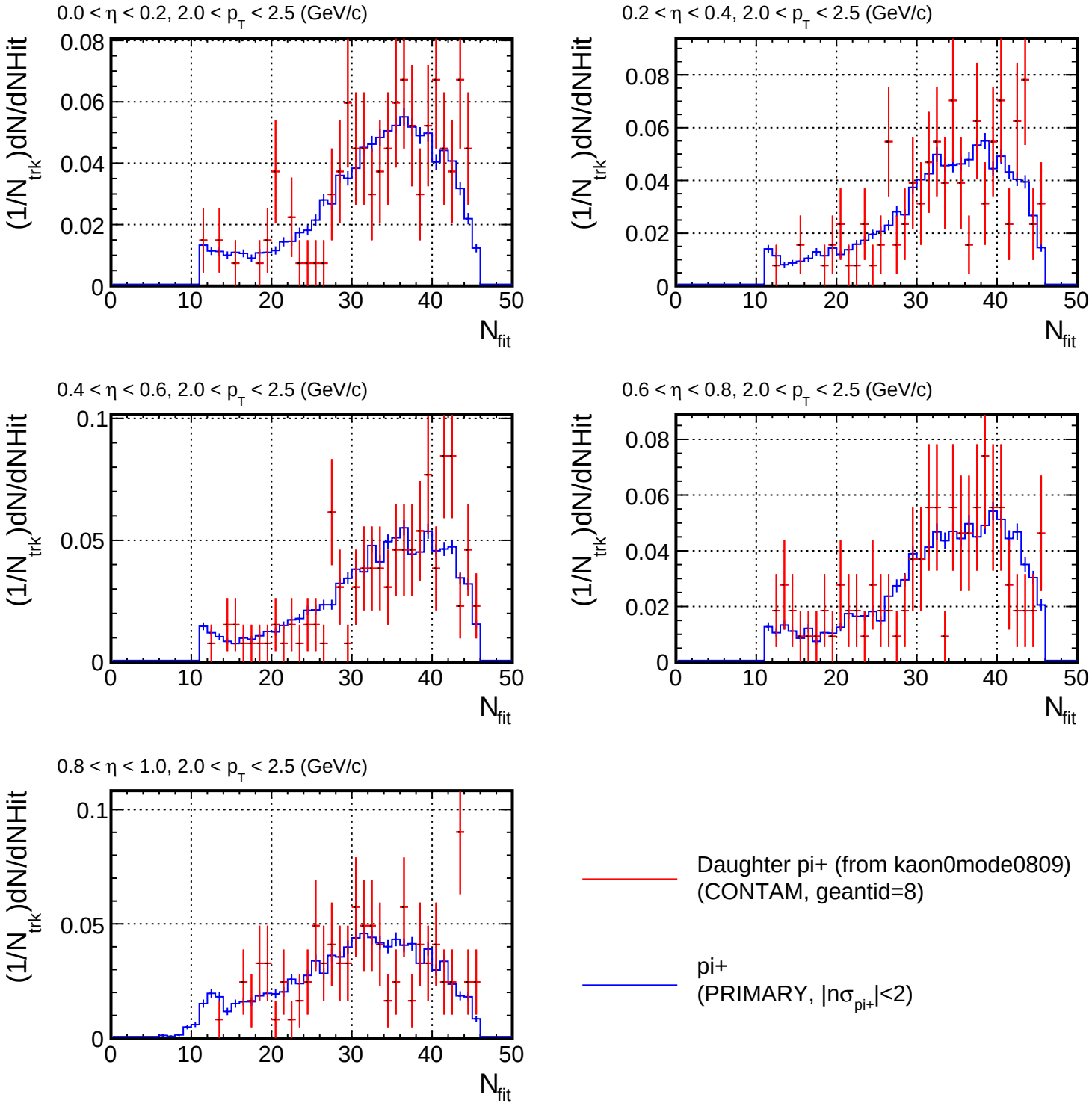
NHit distribution for (p_T, η) slices



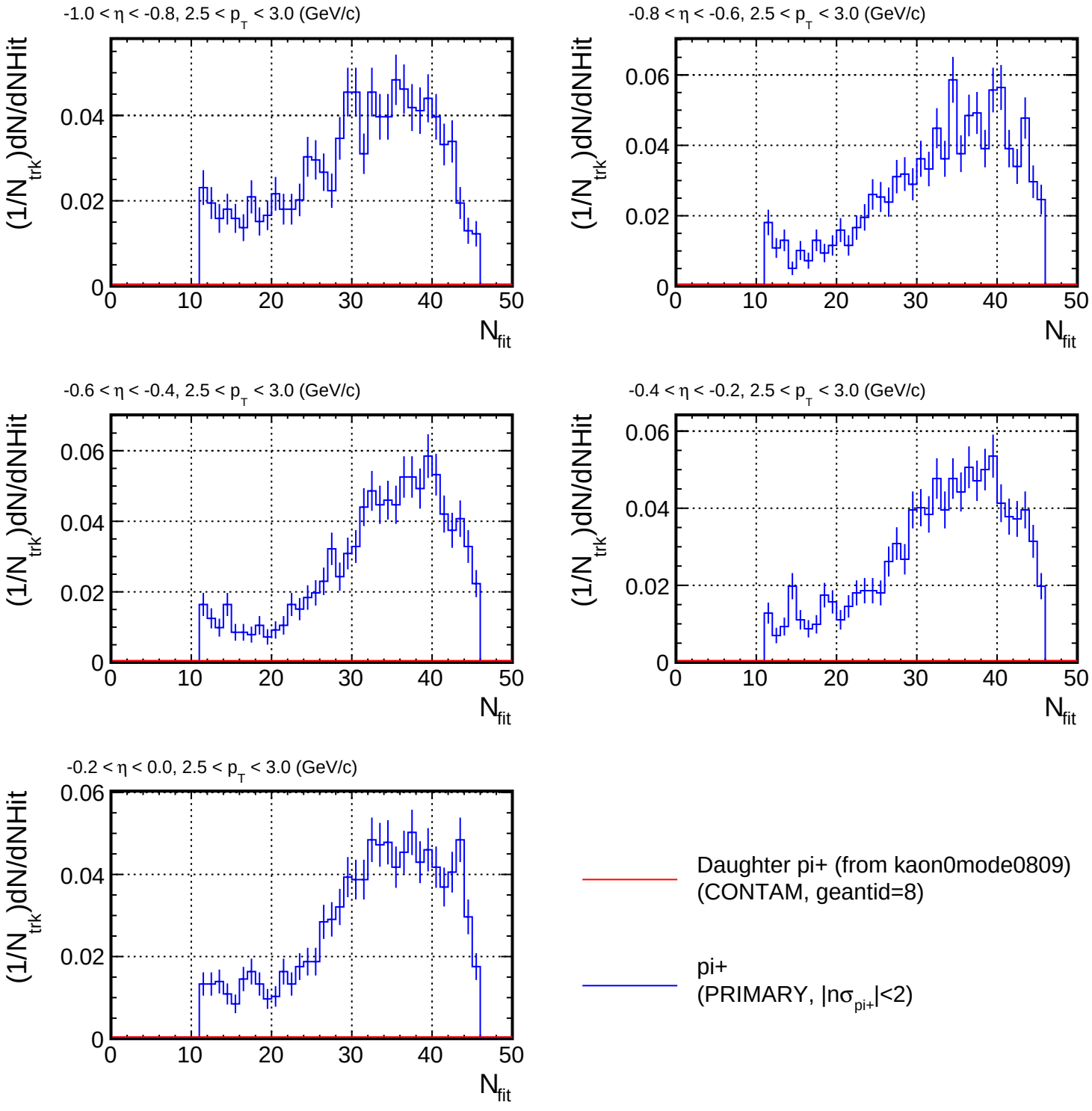
NHit distribution for (p_T, η) slices



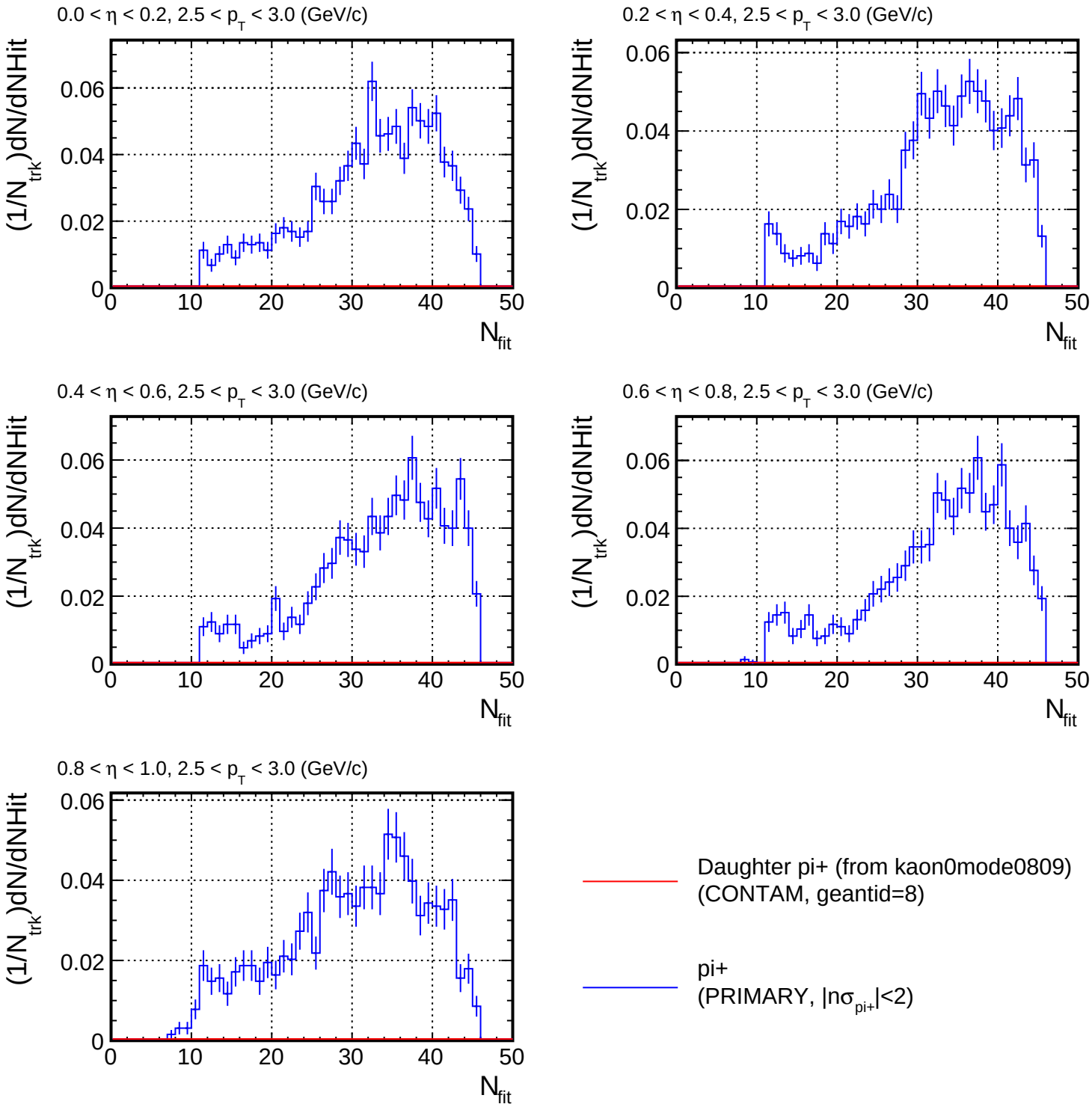
NHit distribution for (p_T, η) slices



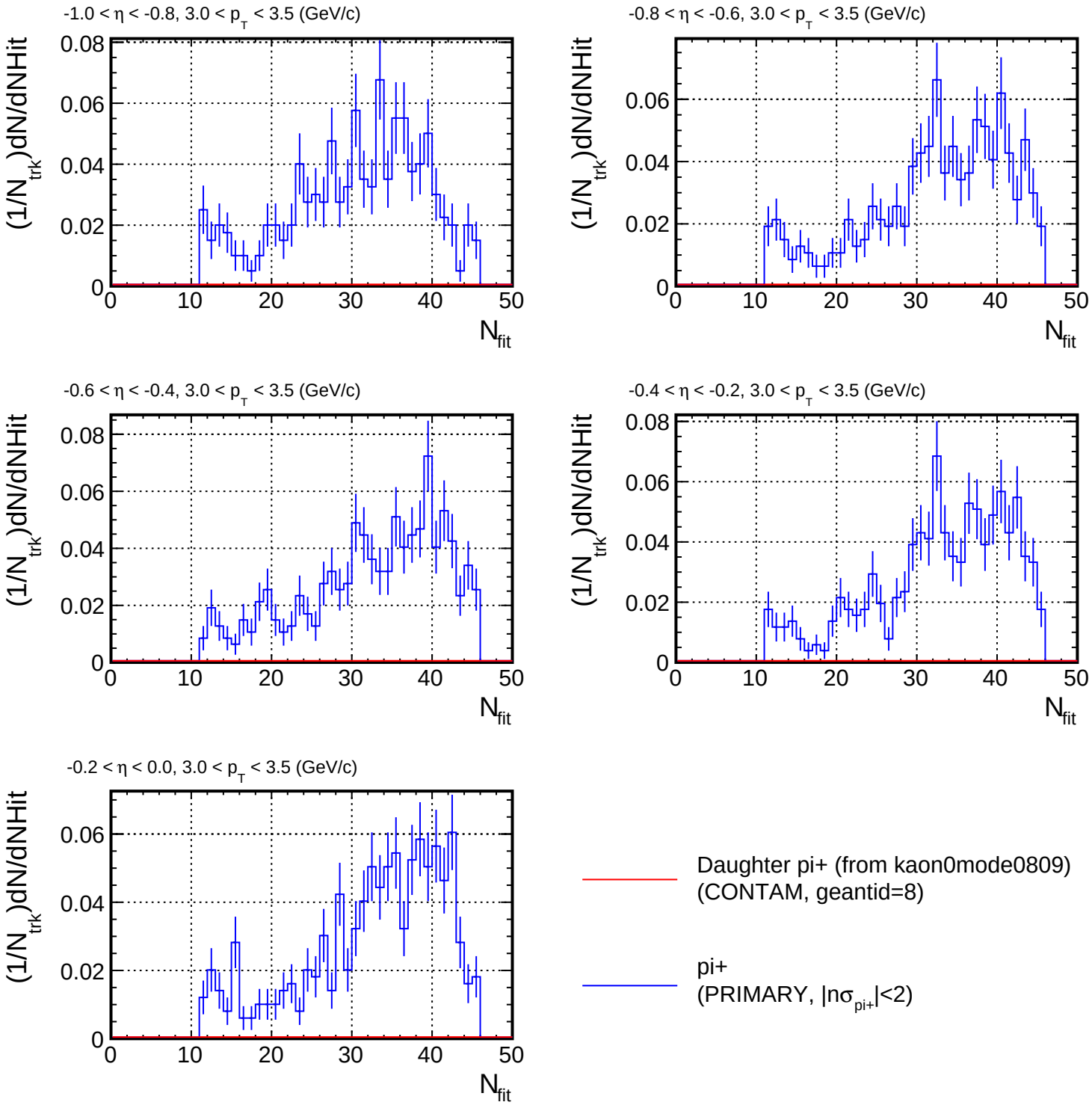
NHit distribution for (p_T, η) slices



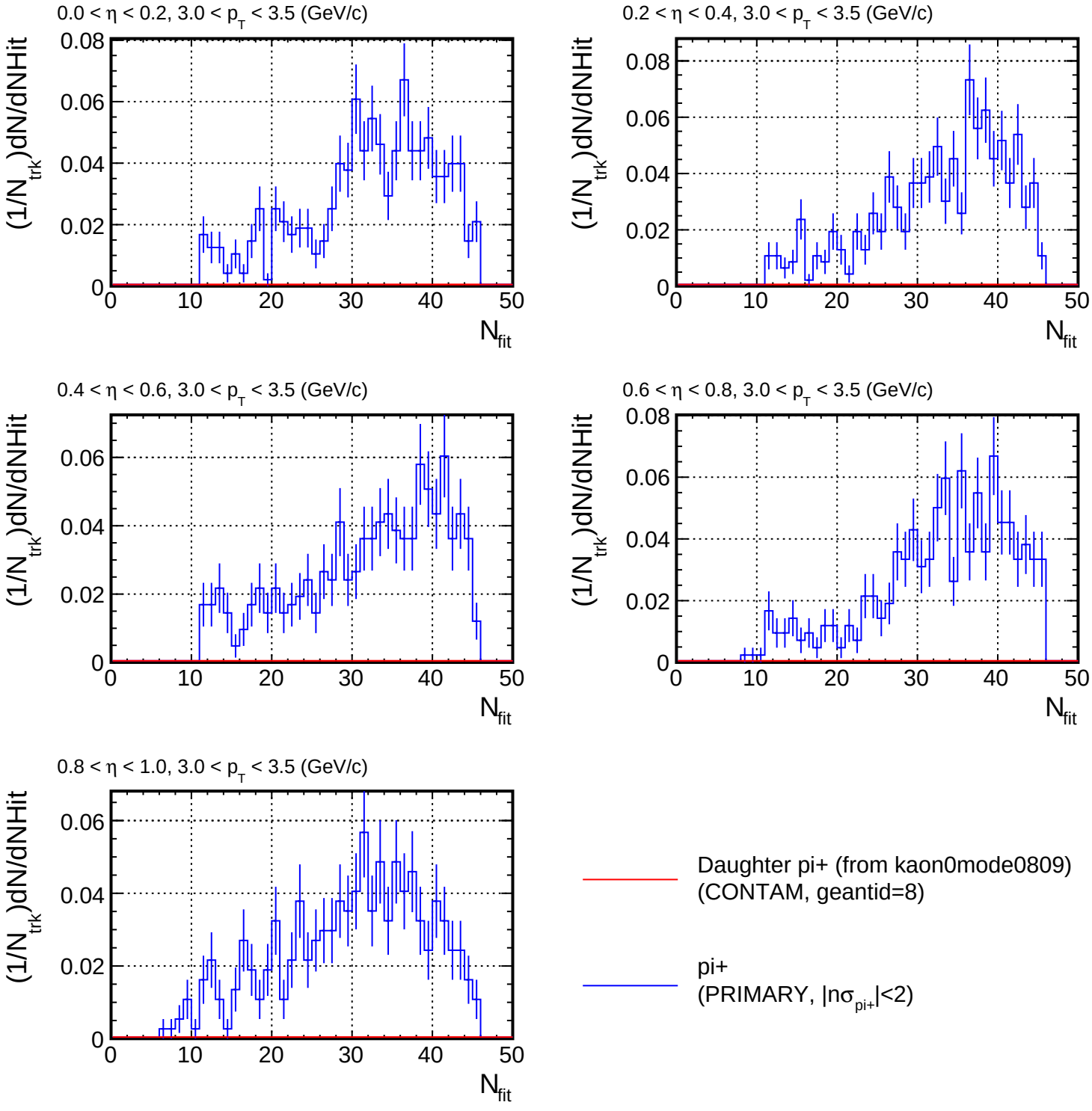
NHit distribution for (p_T, η) slices



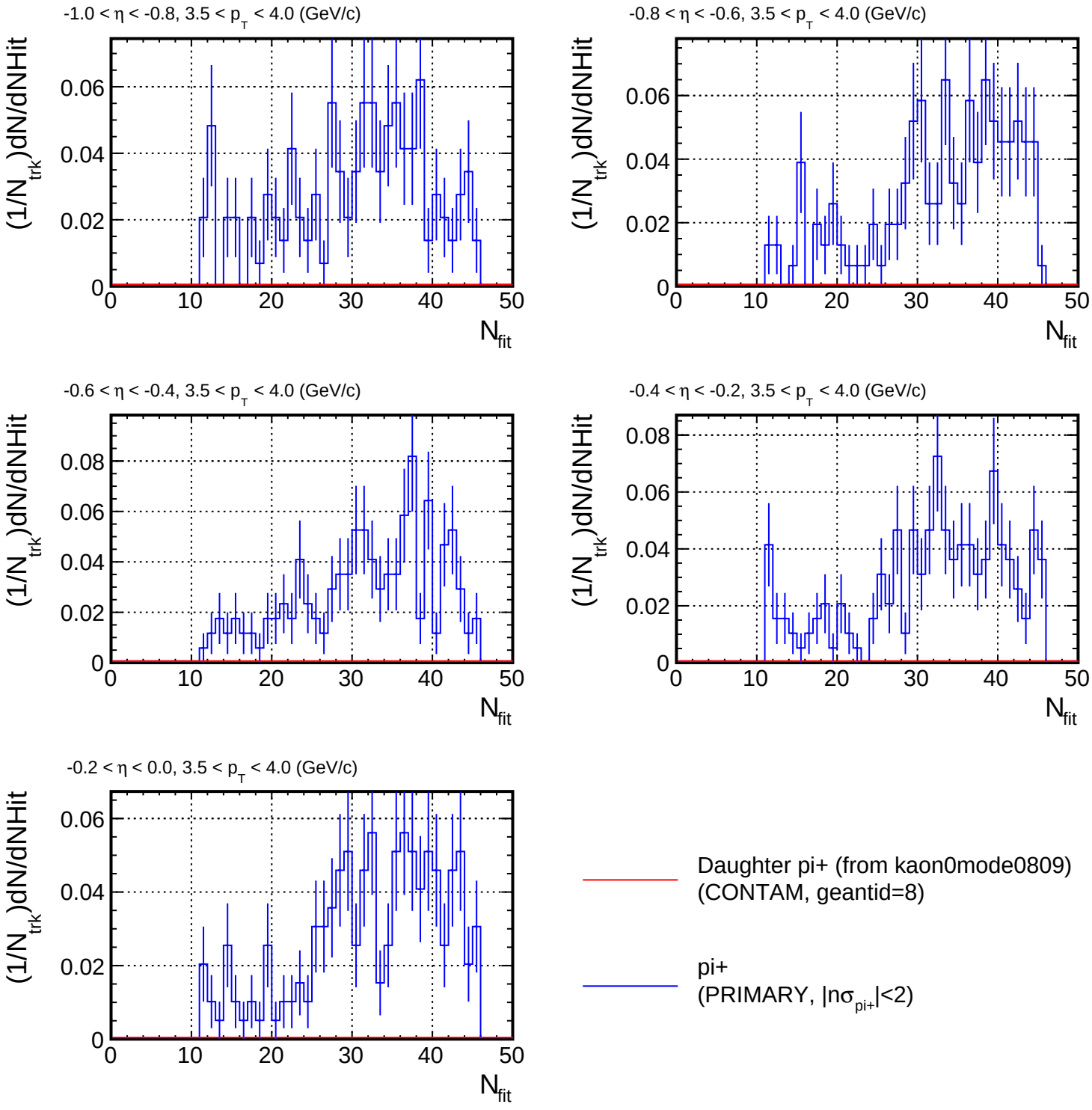
NHit distribution for (p_T, η) slices



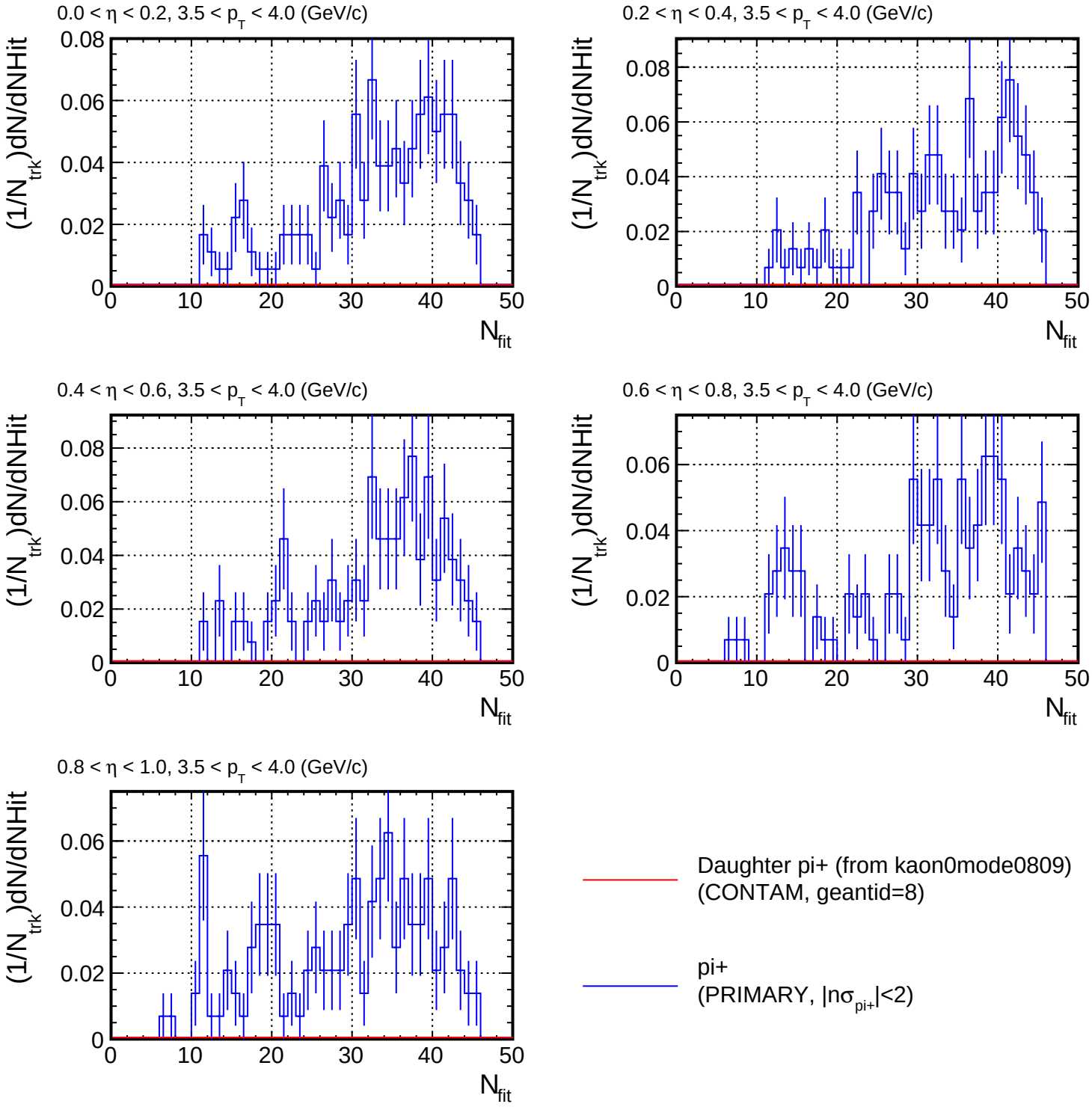
NHit distribution for (p_T, η) slices



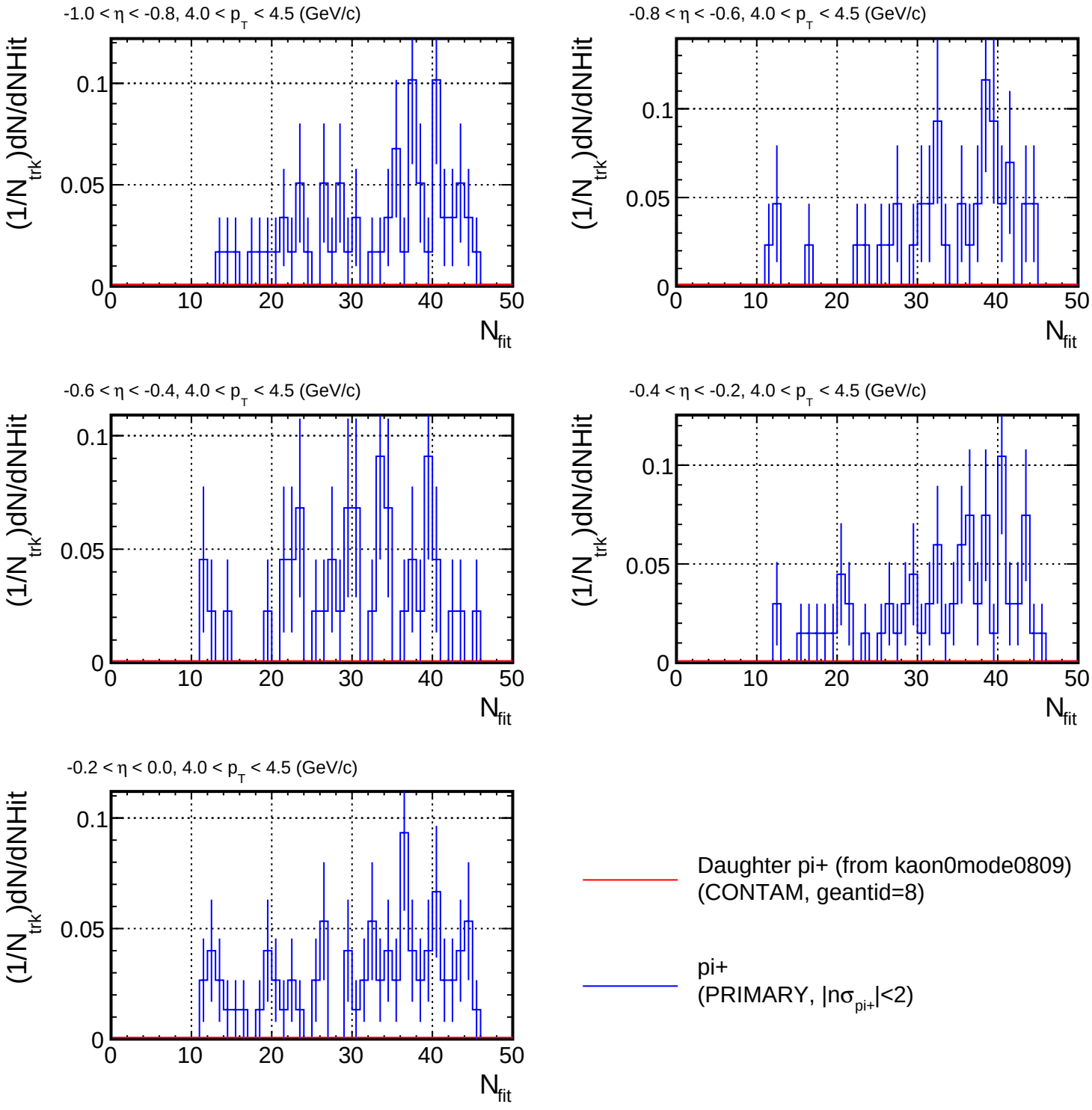
NHit distribution for (p_T, η) slices



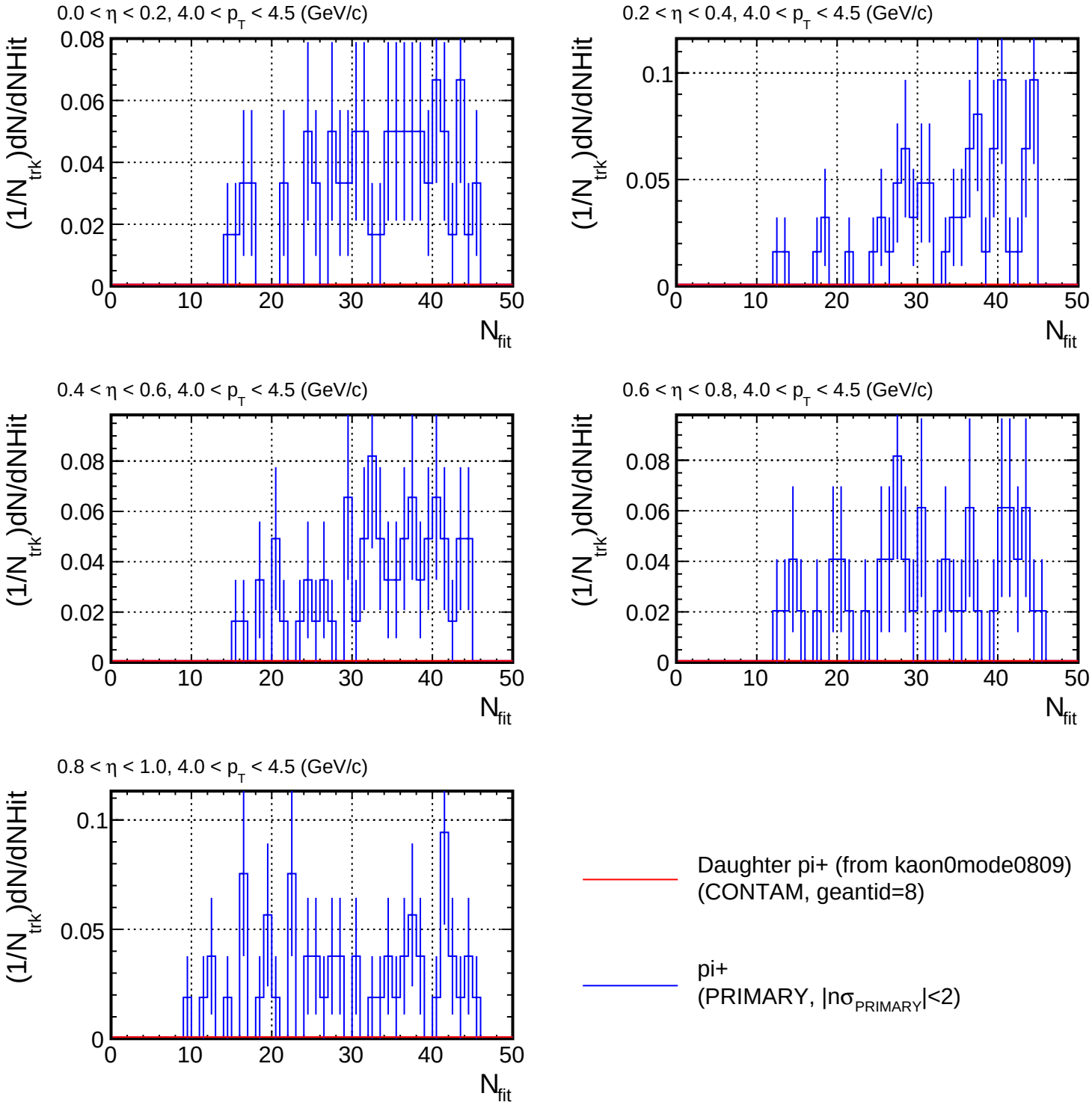
NHit distribution for (p_T, η) slices



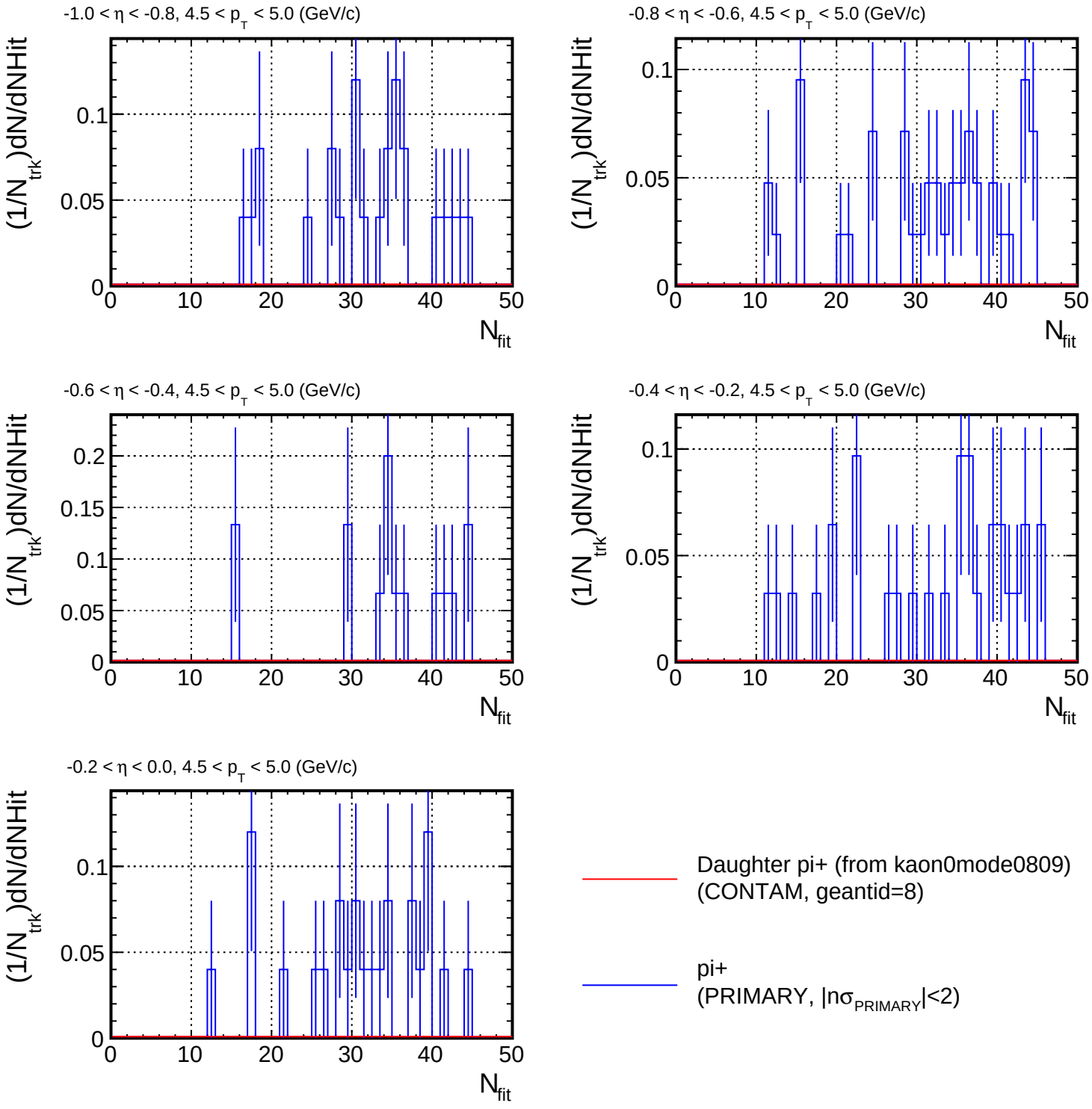
NHit distribution for (p_T, η) slices



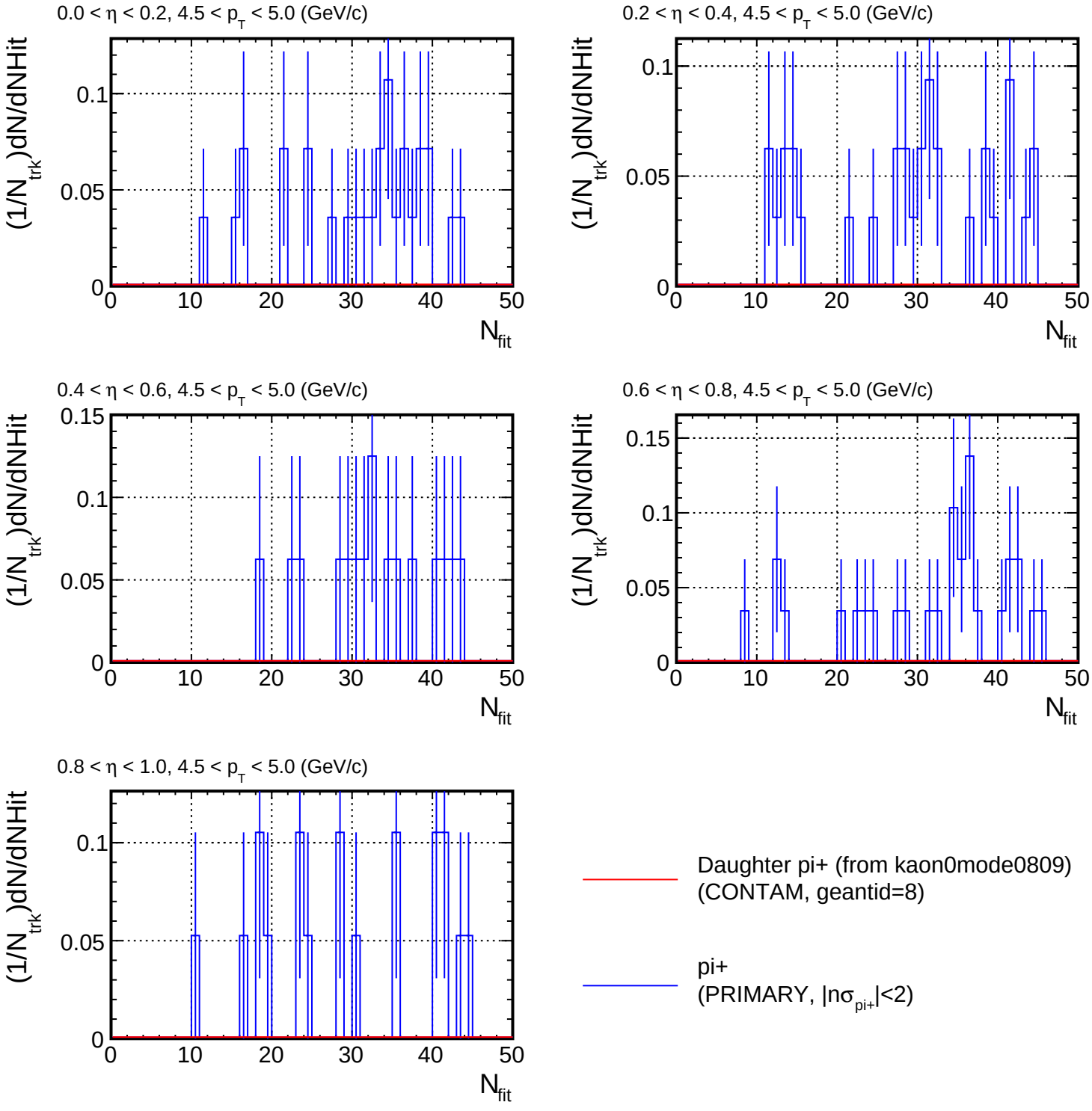
NHit distribution for (p_T, η) slices



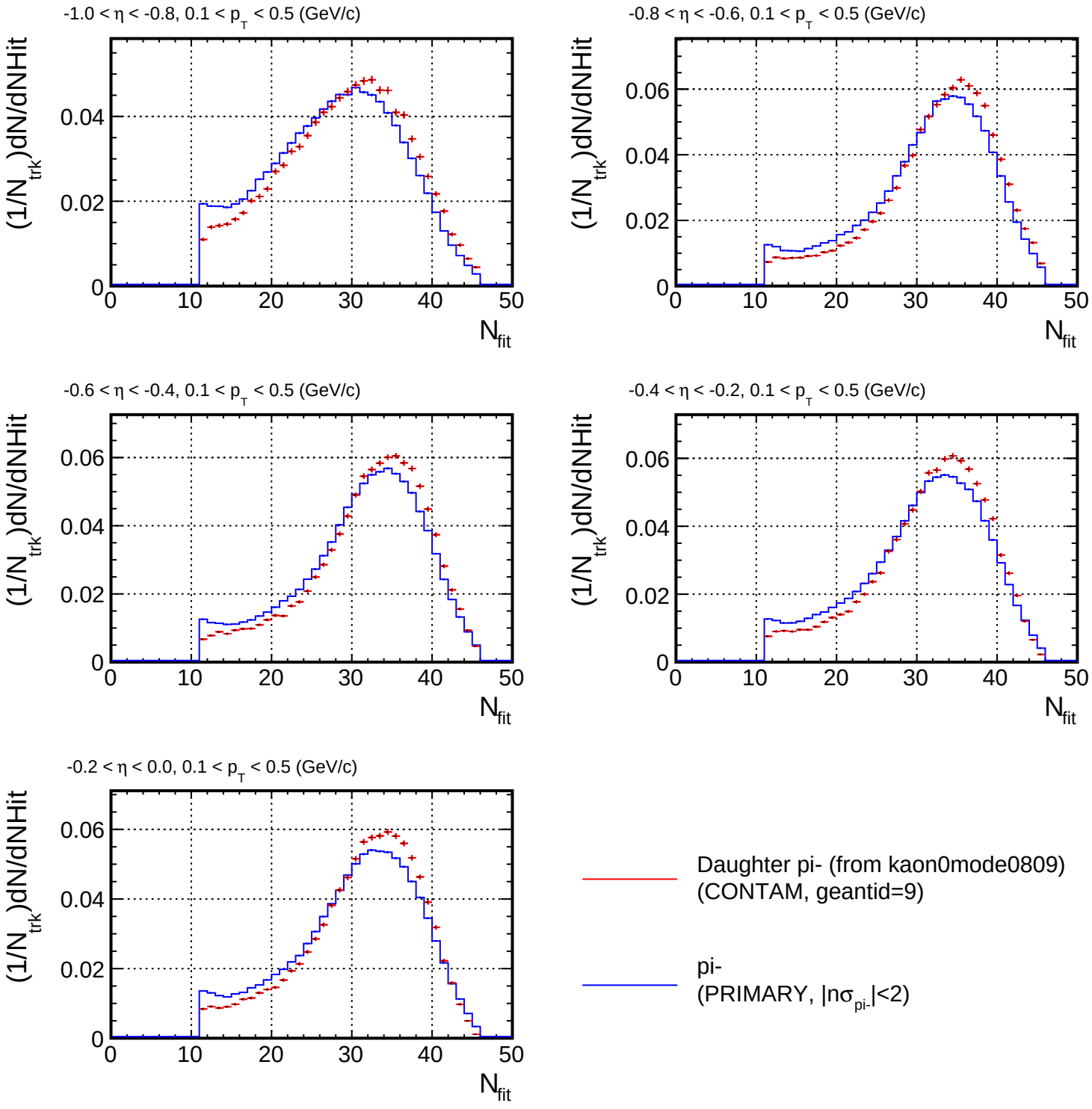
NHit distribution for (p_T, η) slices



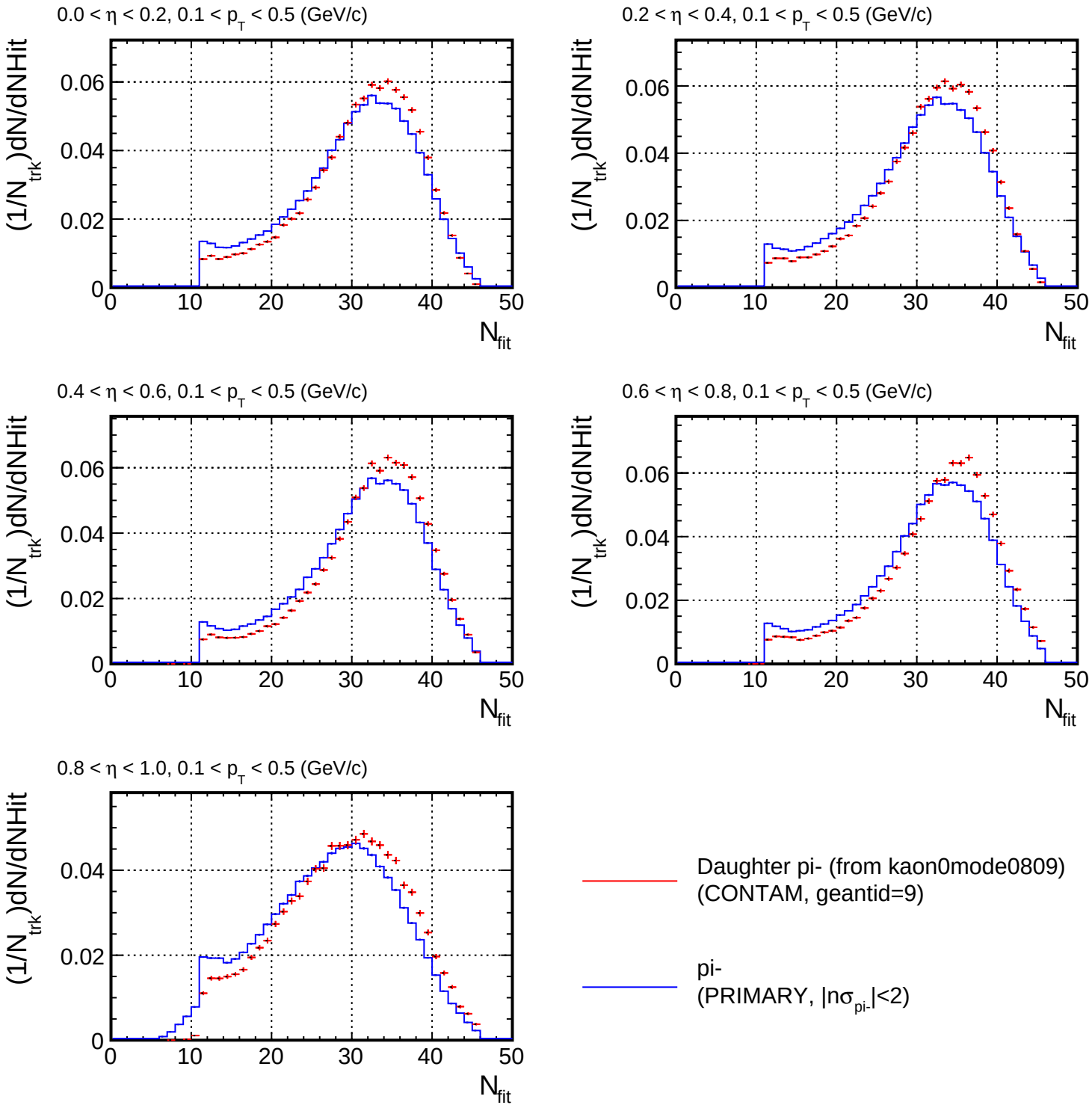
NHit distribution for (p_T, η) slices



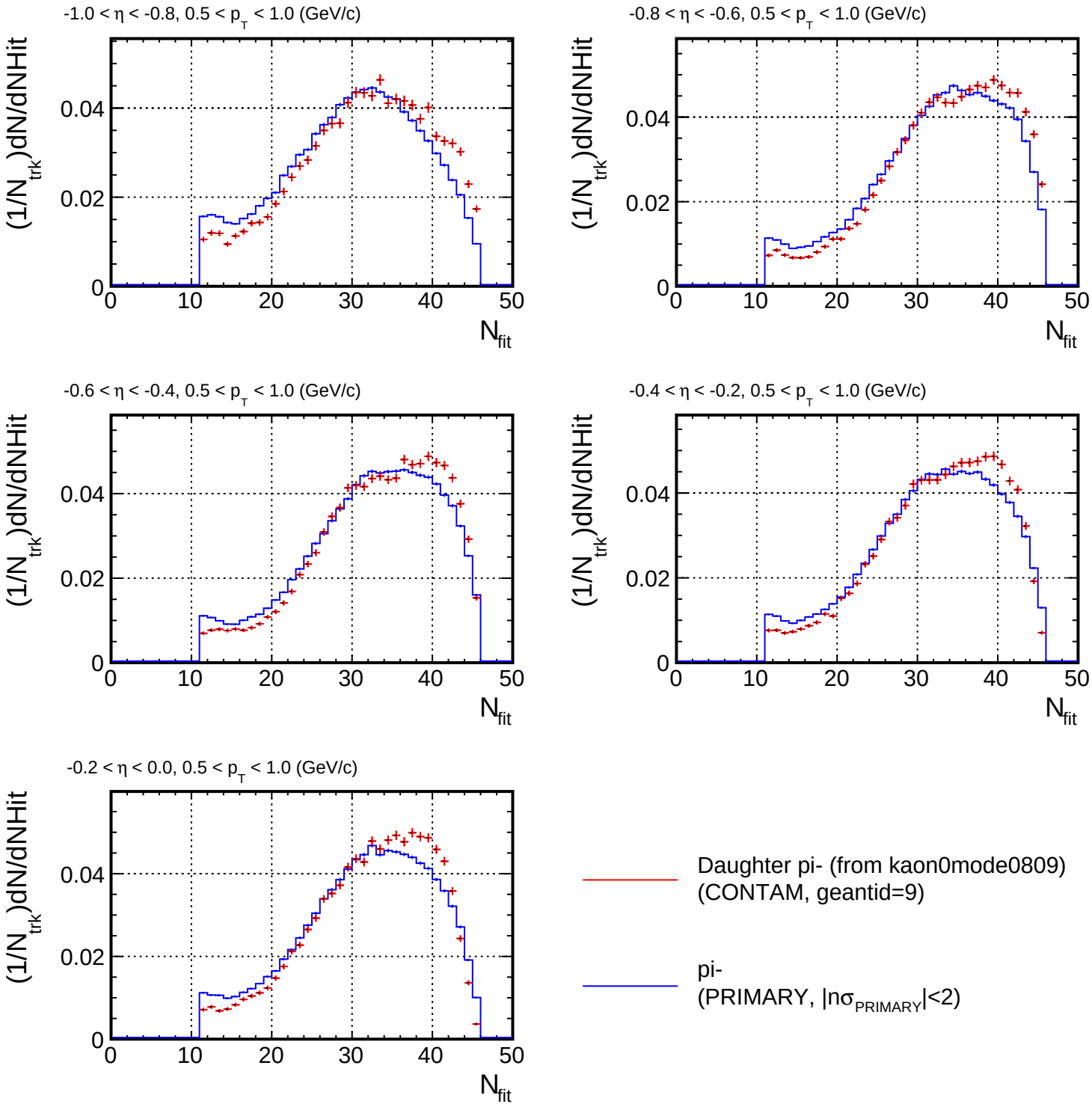
NHit distribution for (p_T, η) slices



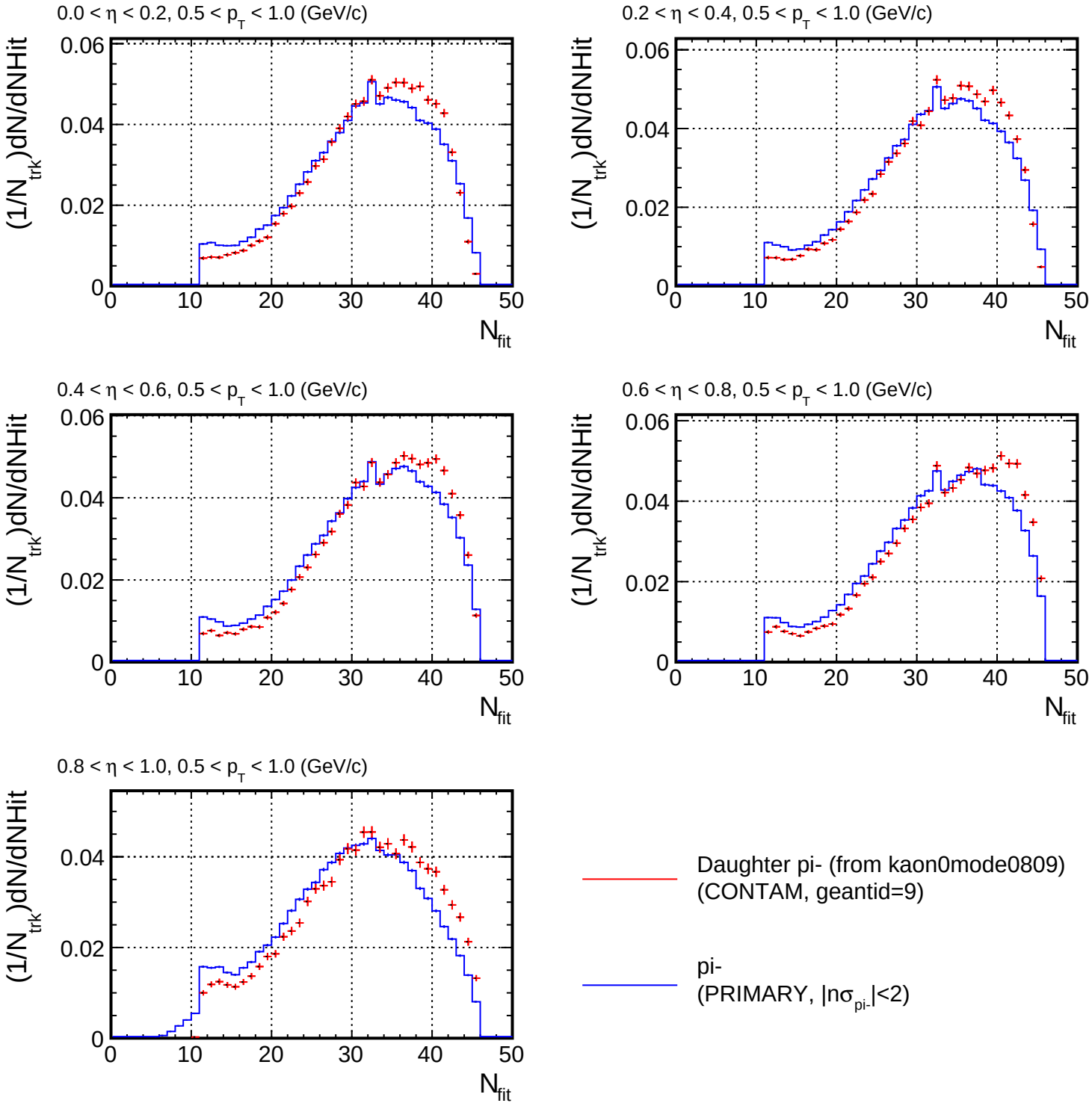
NHit distribution for (p_T, η) slices



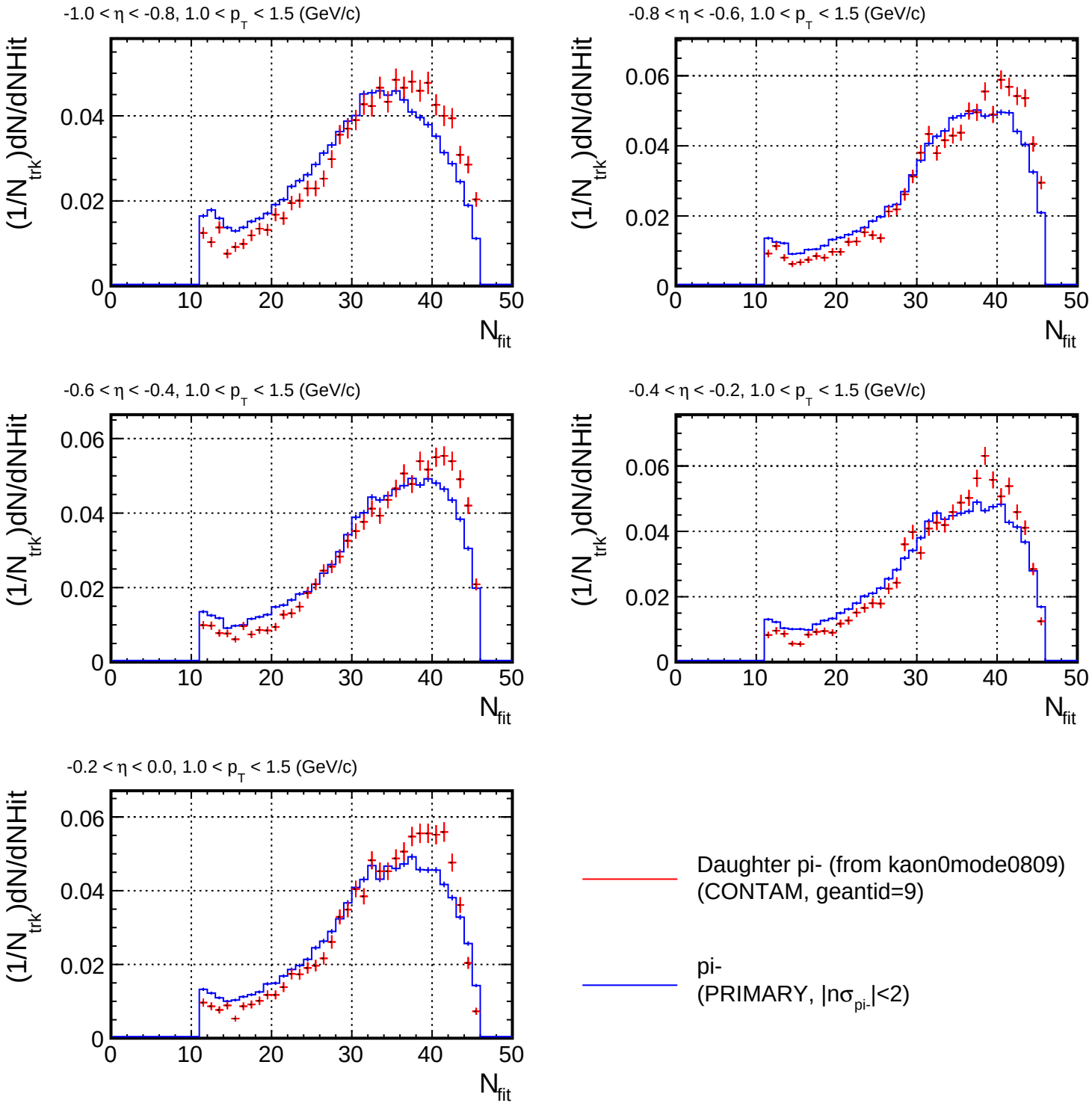
NHit distribution for (p_T, η) slices



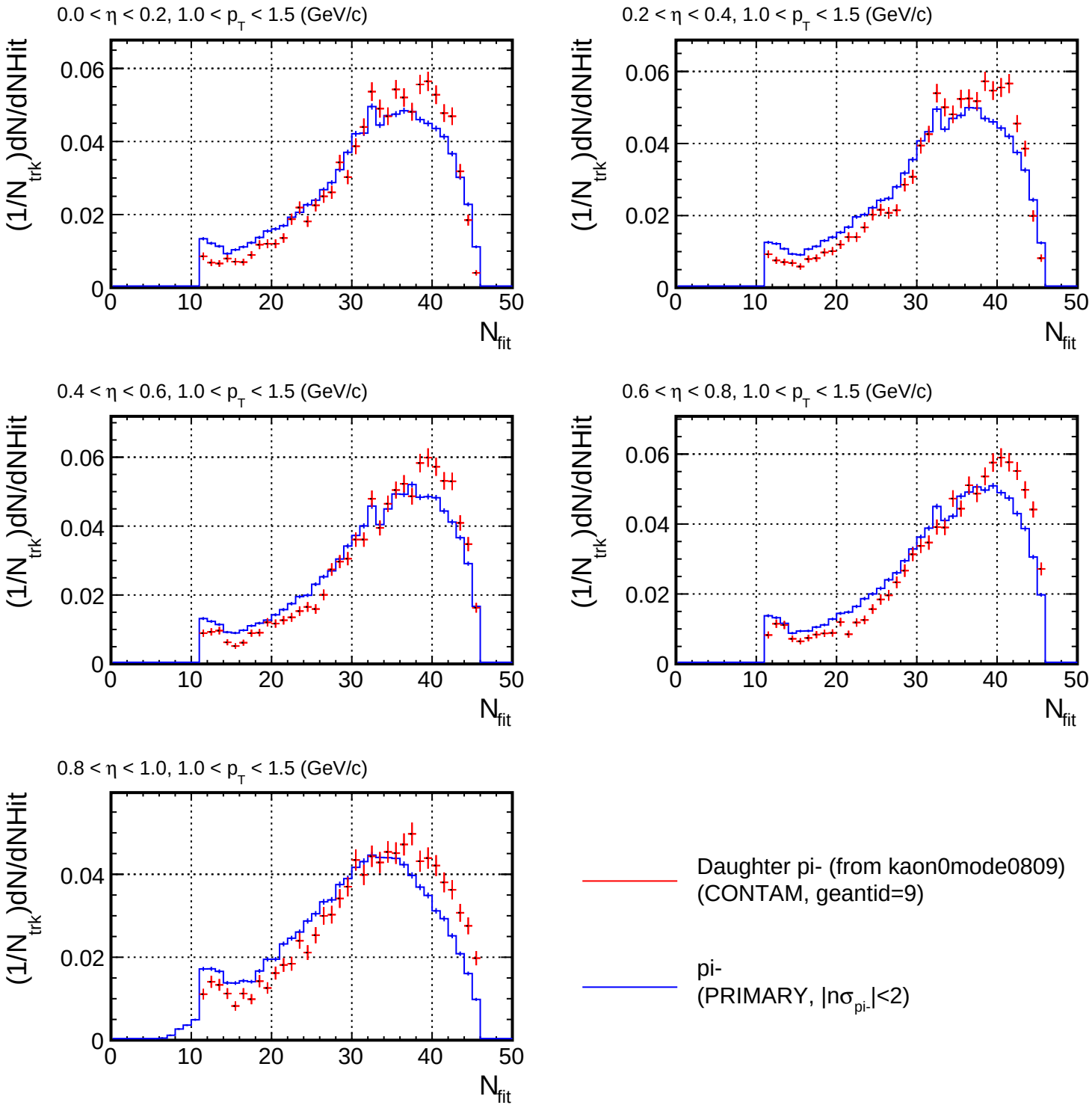
NHit distribution for (p_T, η) slices



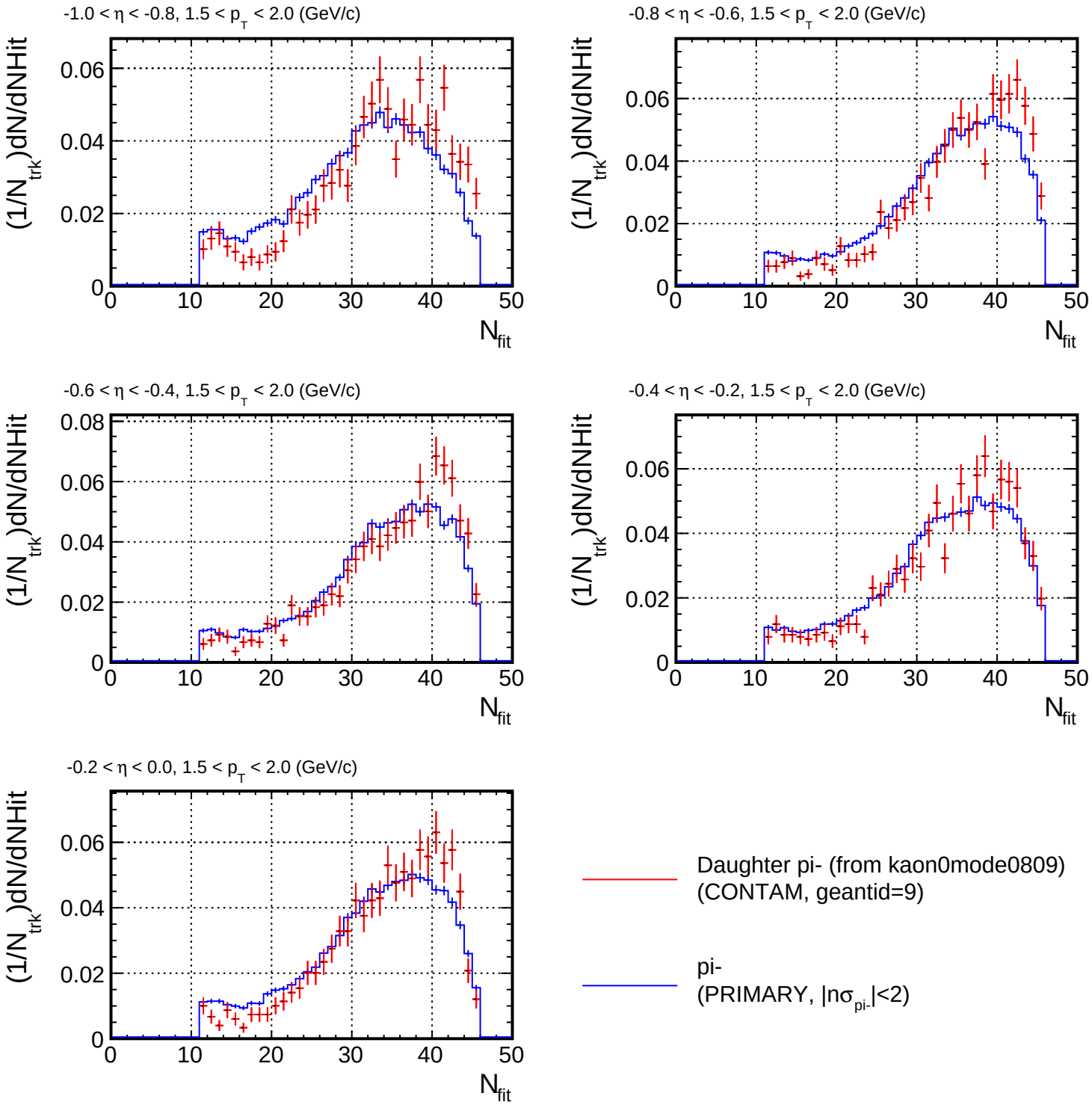
NHit distribution for (p_T, η) slices



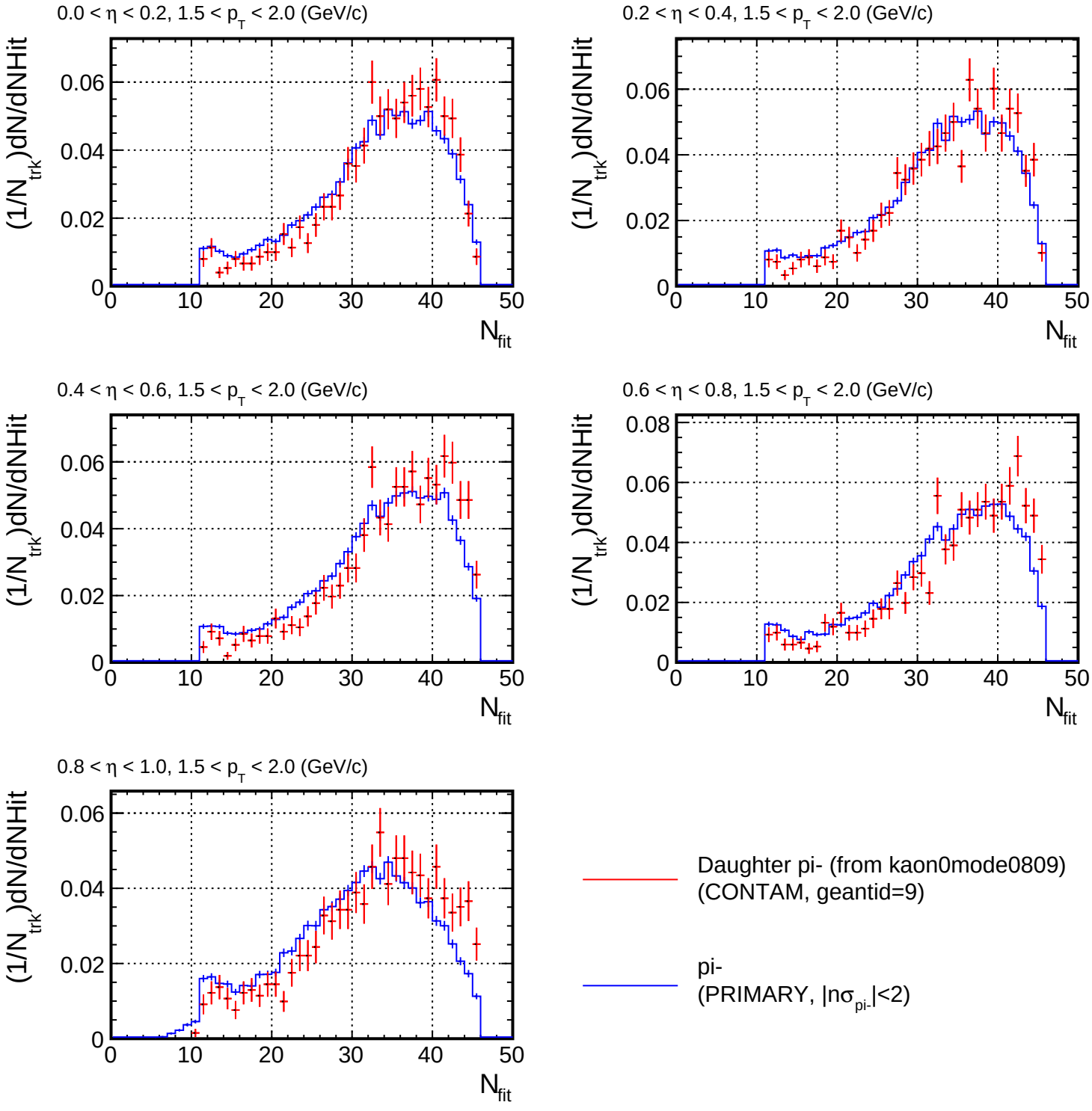
NHit distribution for (p_T, η) slices



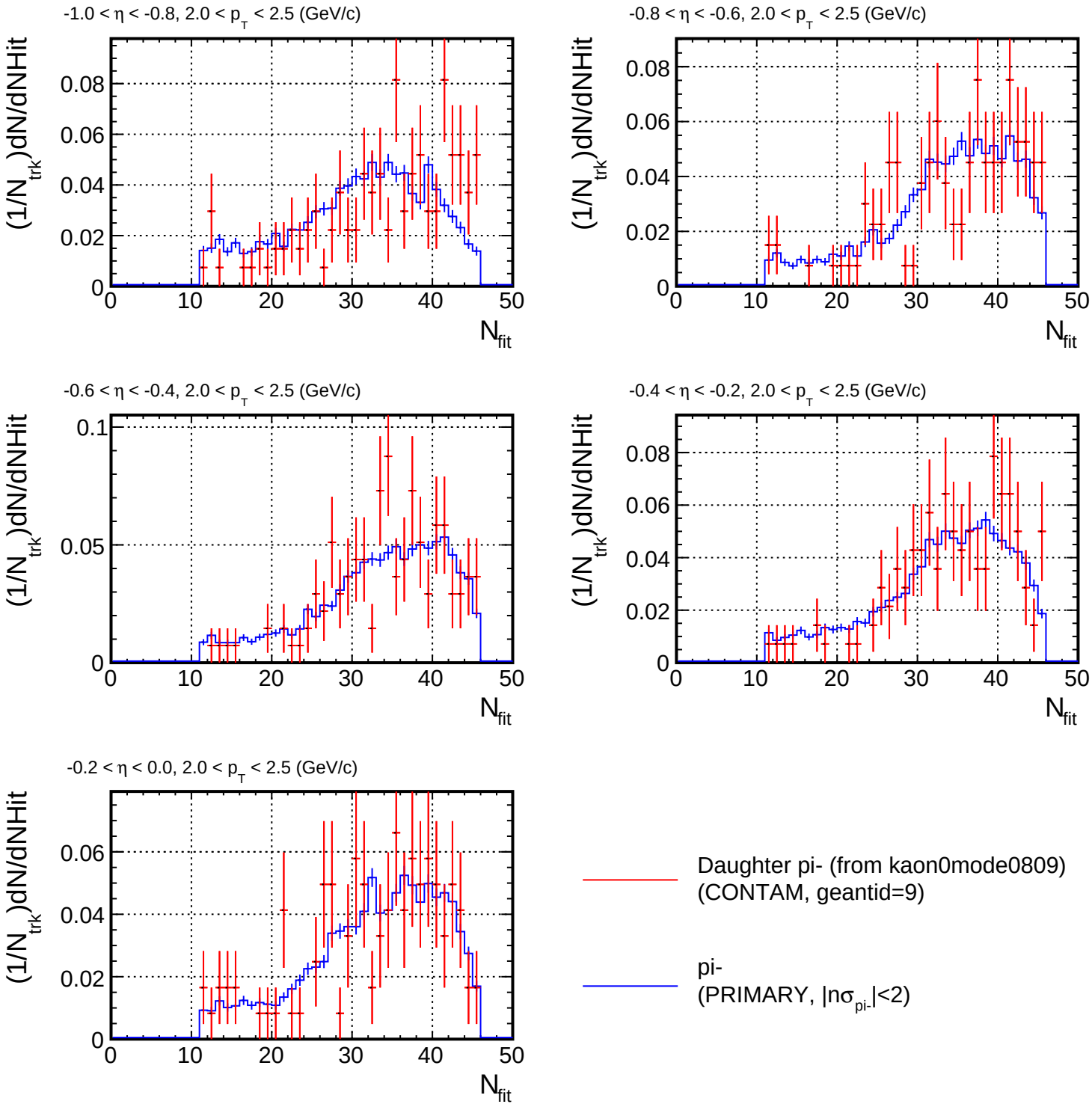
NHit distribution for (p_T, η) slices



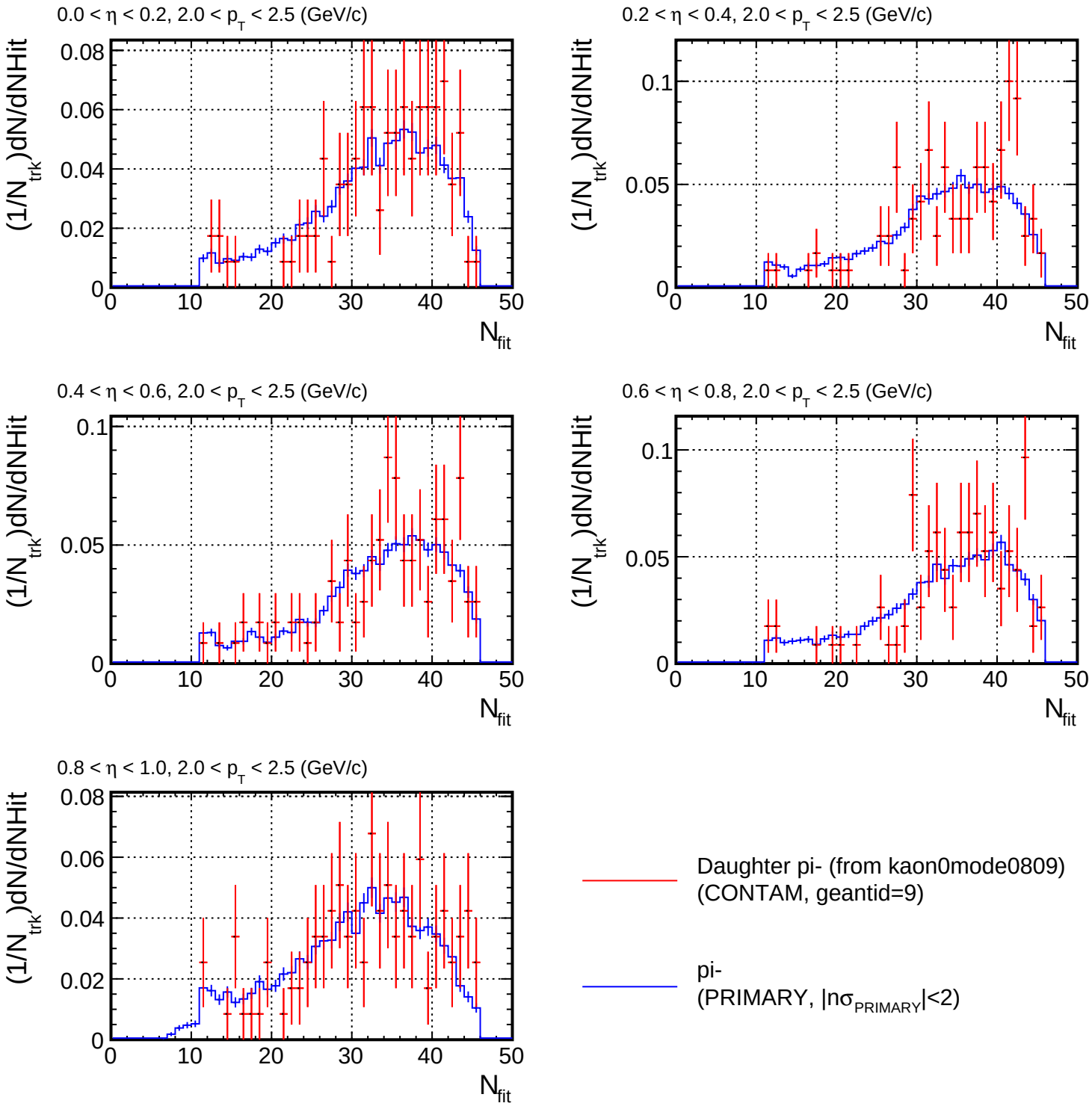
NHit distribution for (p_T, η) slices



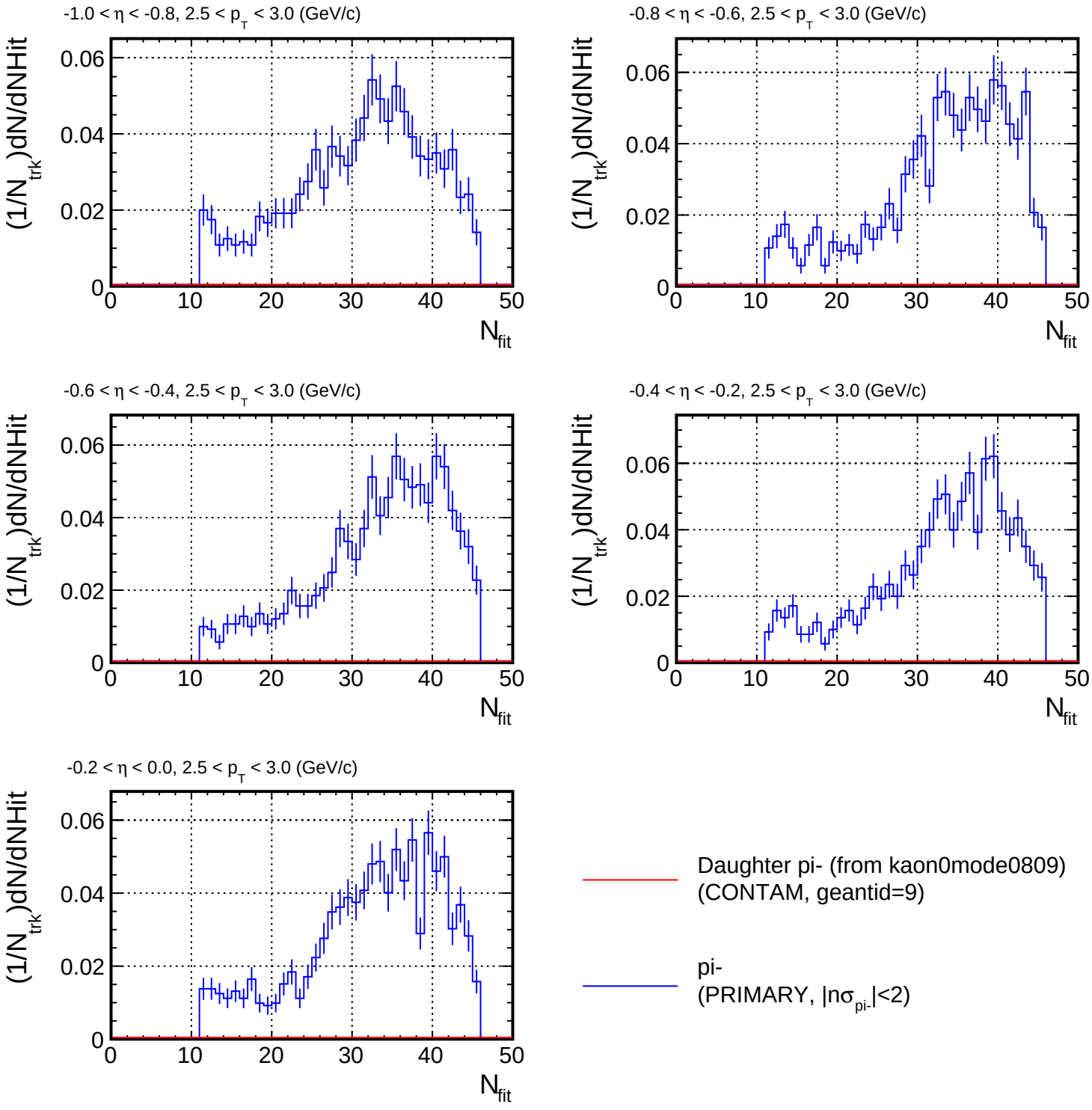
NHit distribution for (p_T, η) slices



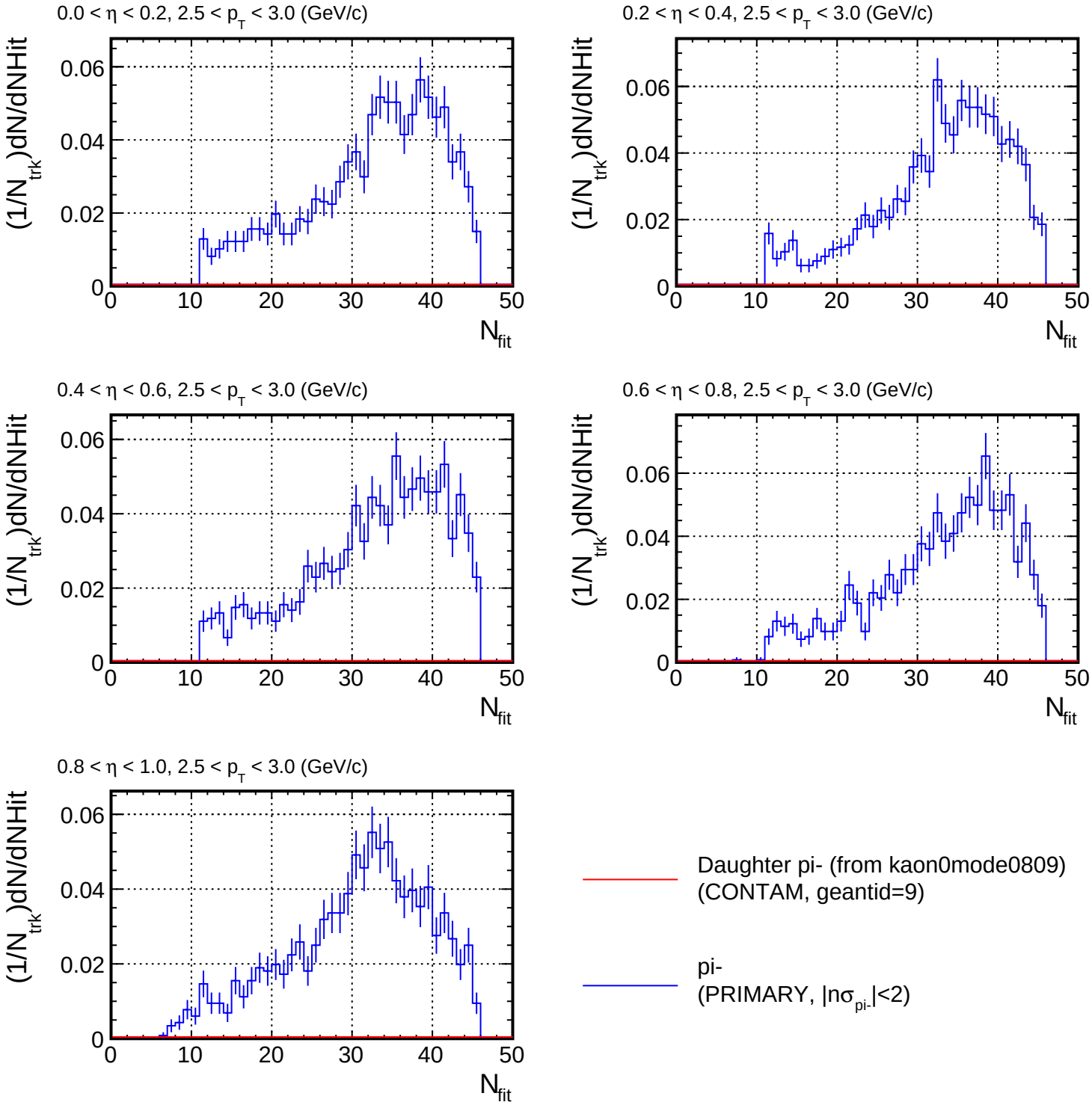
NHit distribution for (p_T, η) slices



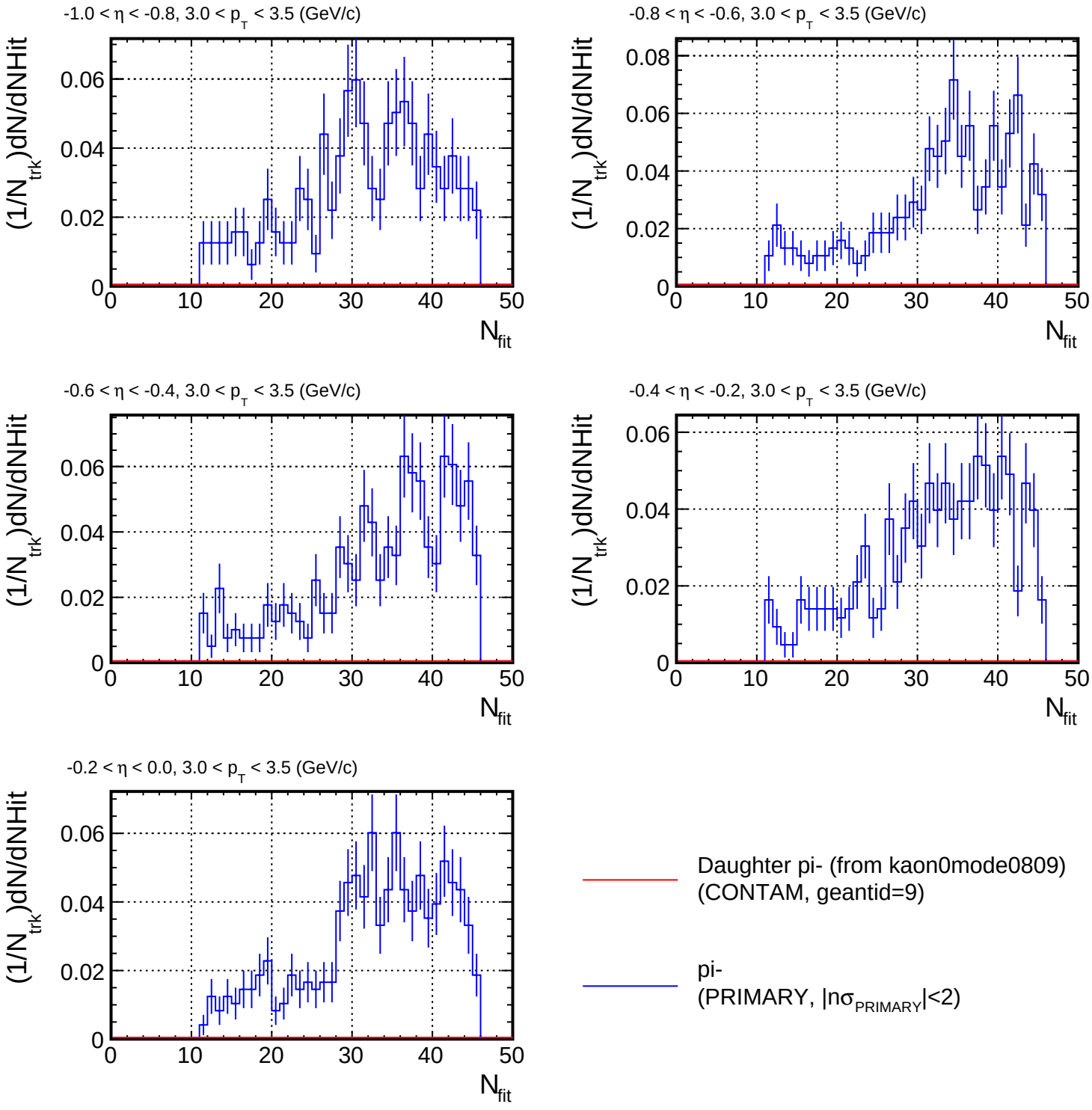
NHit distribution for (p_T, η) slices



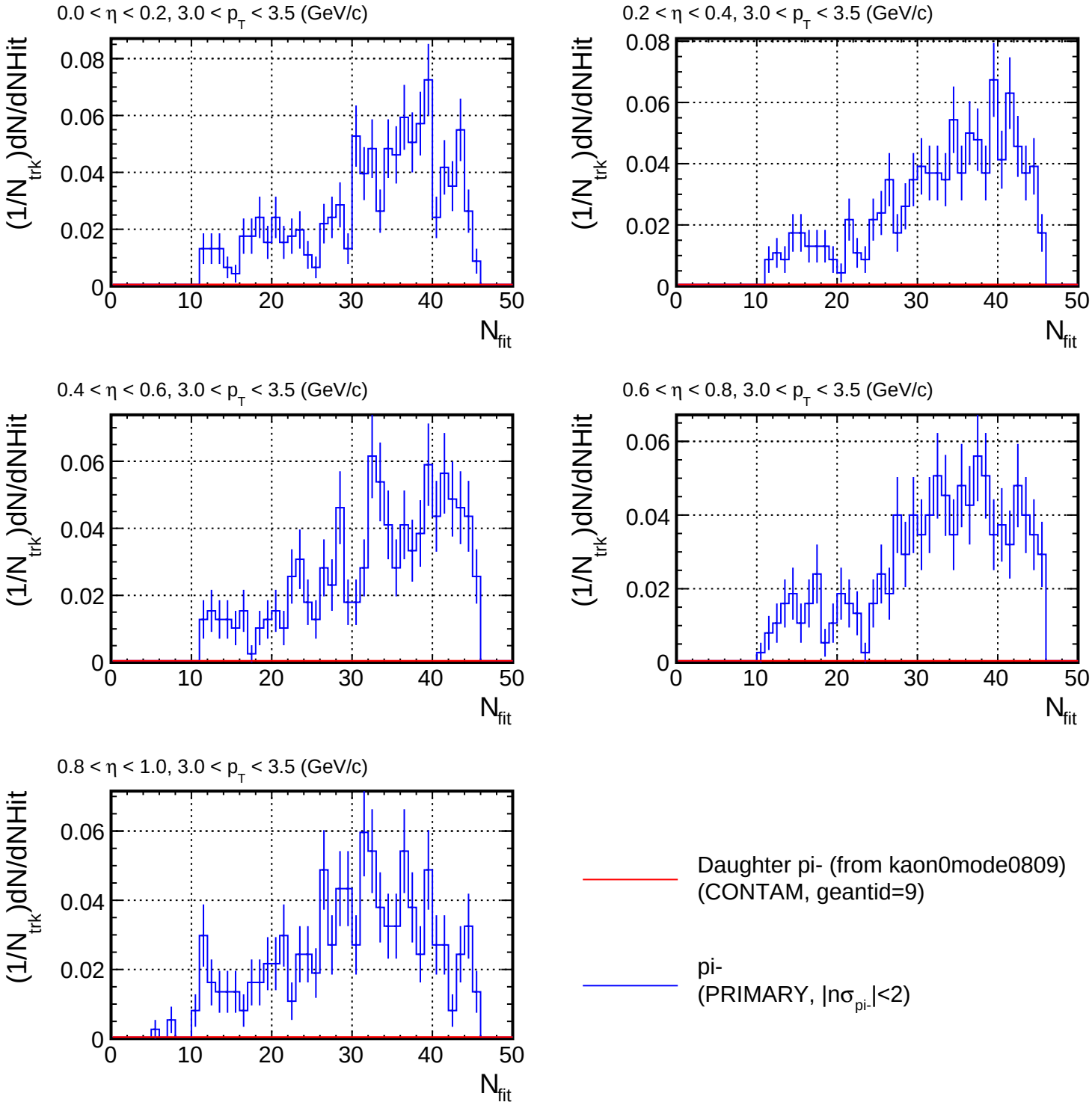
NHit distribution for (p_T, η) slices



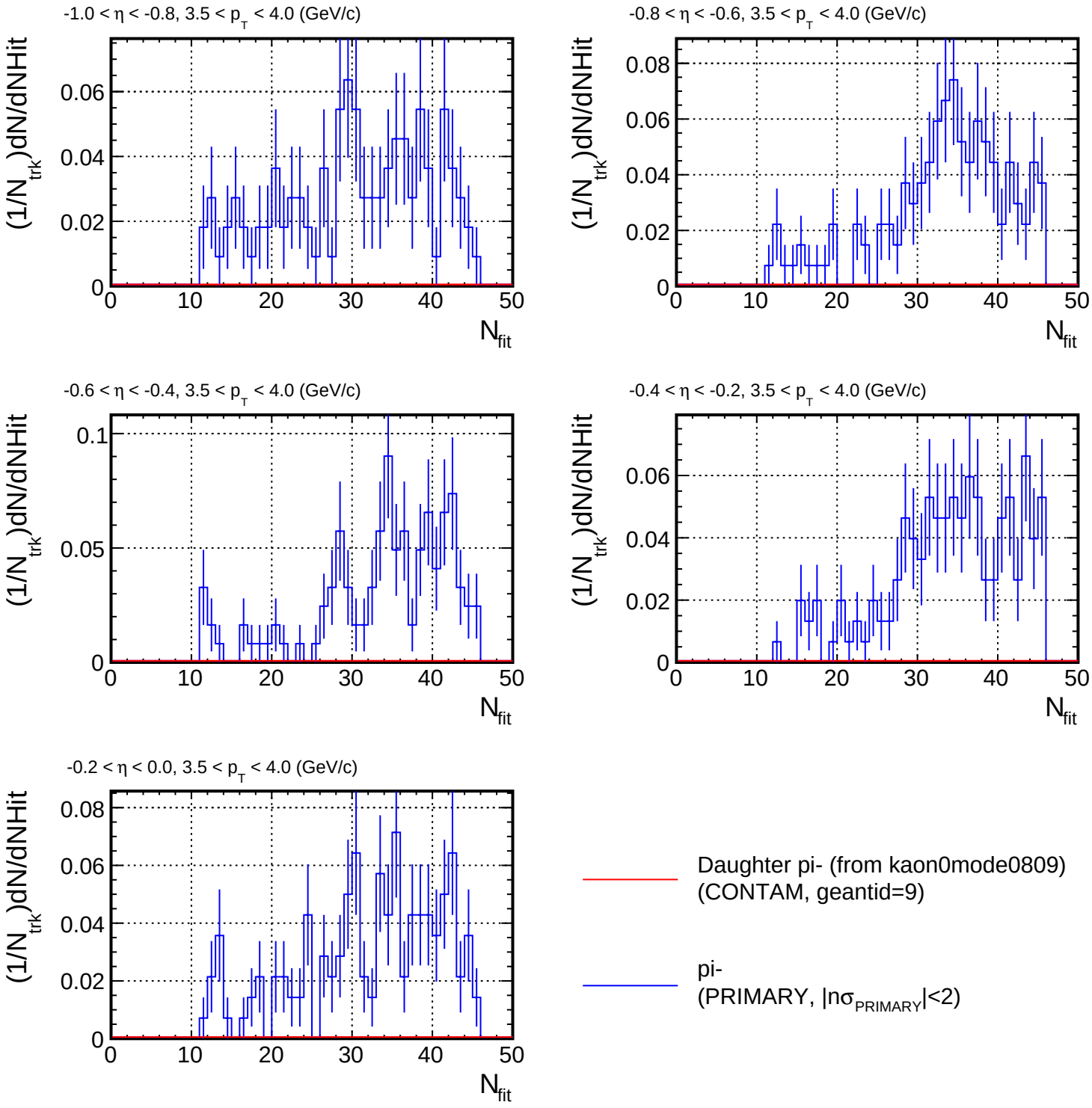
NHit distribution for (p_T, η) slices



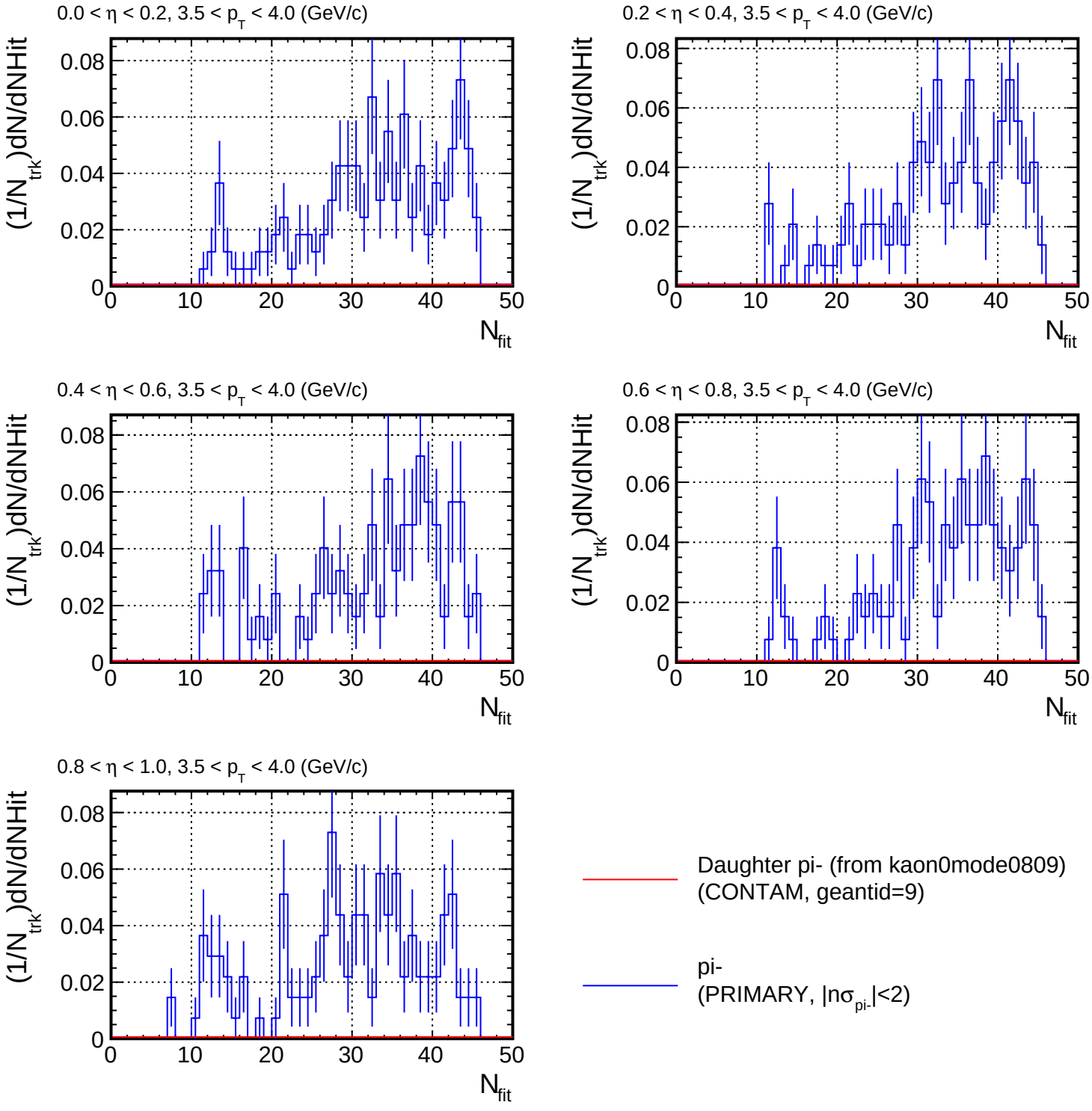
NHit distribution for (p_T, η) slices



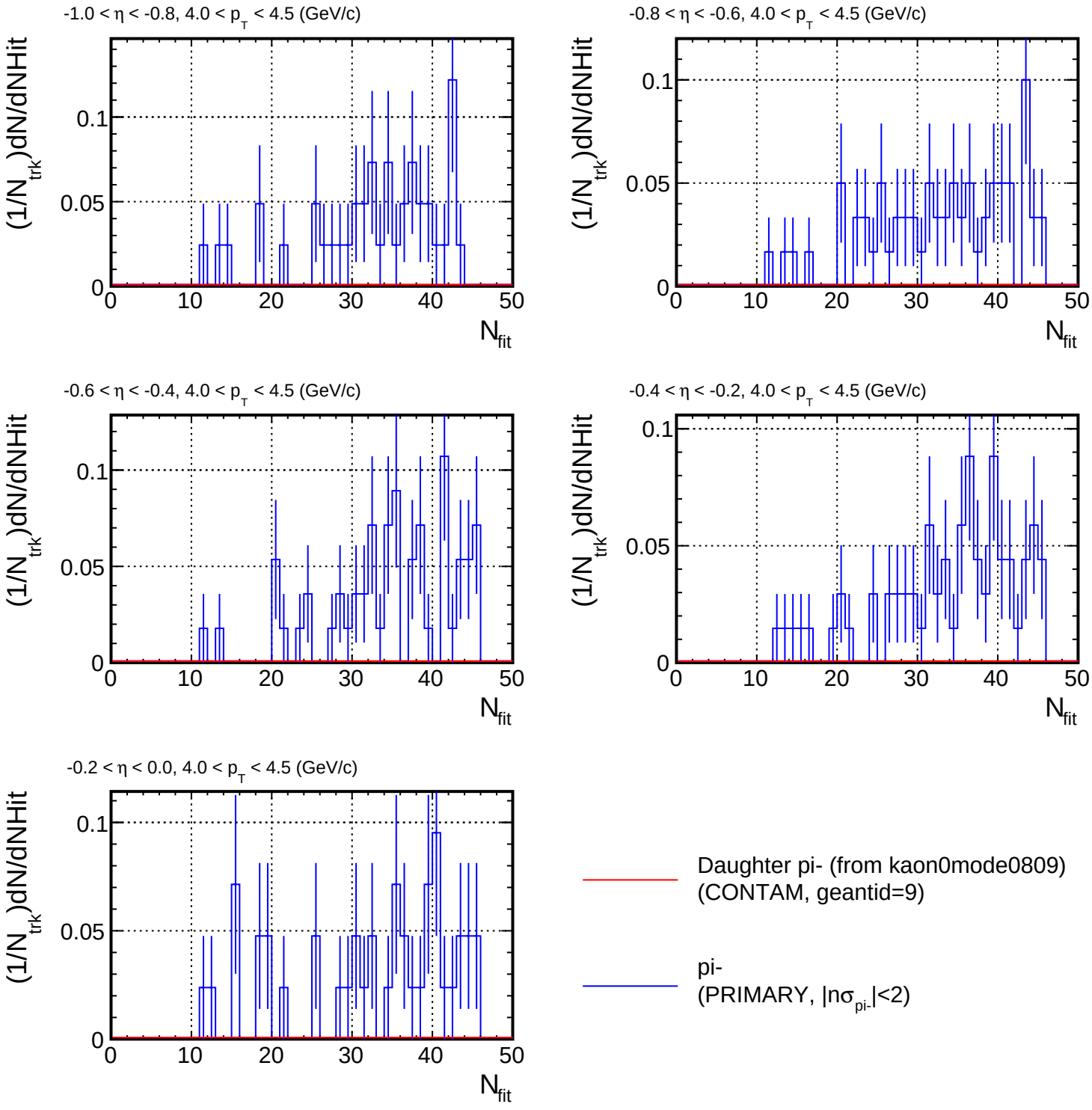
NHit distribution for (p_T, η) slices



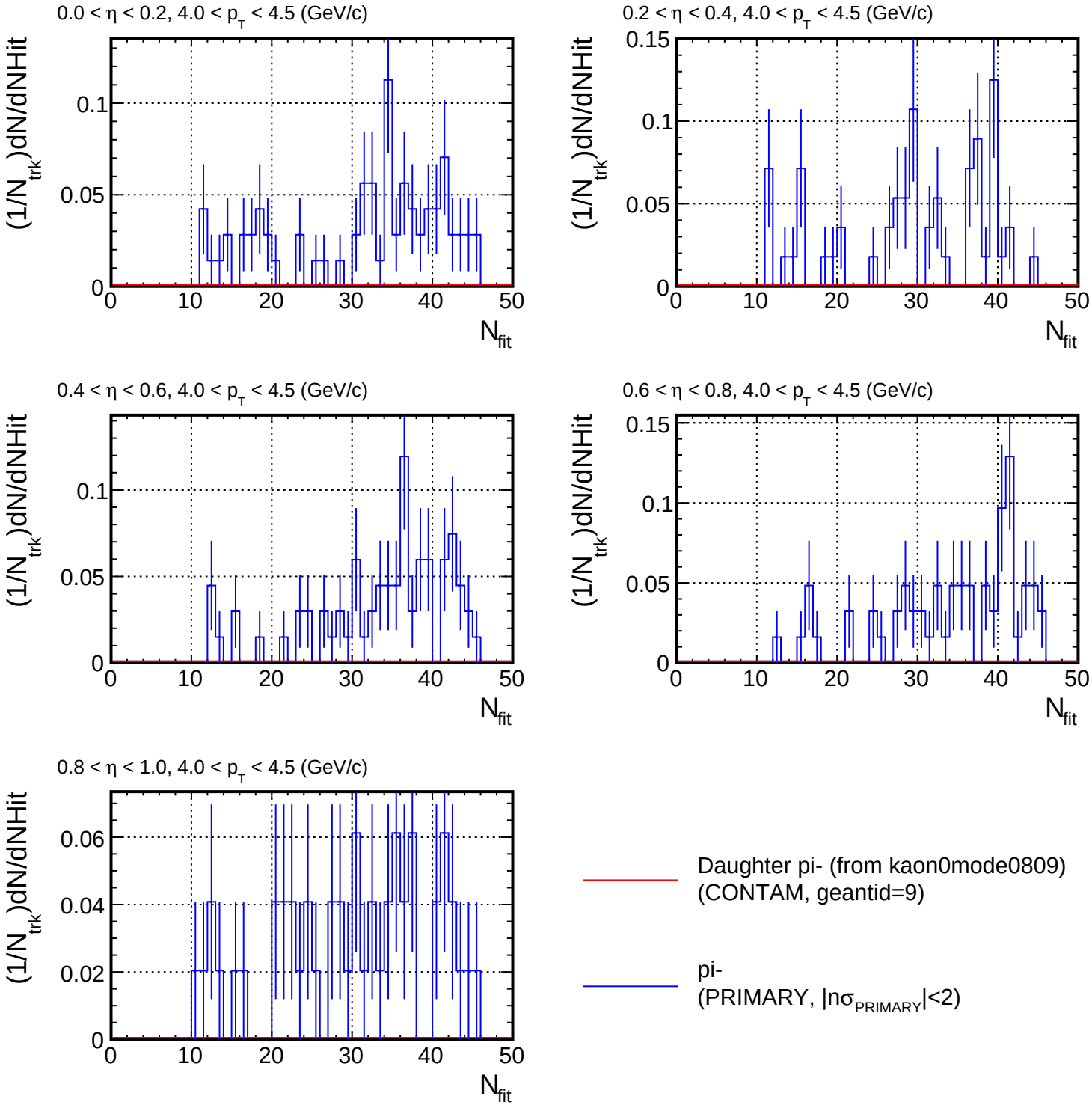
NHit distribution for (p_T, η) slices



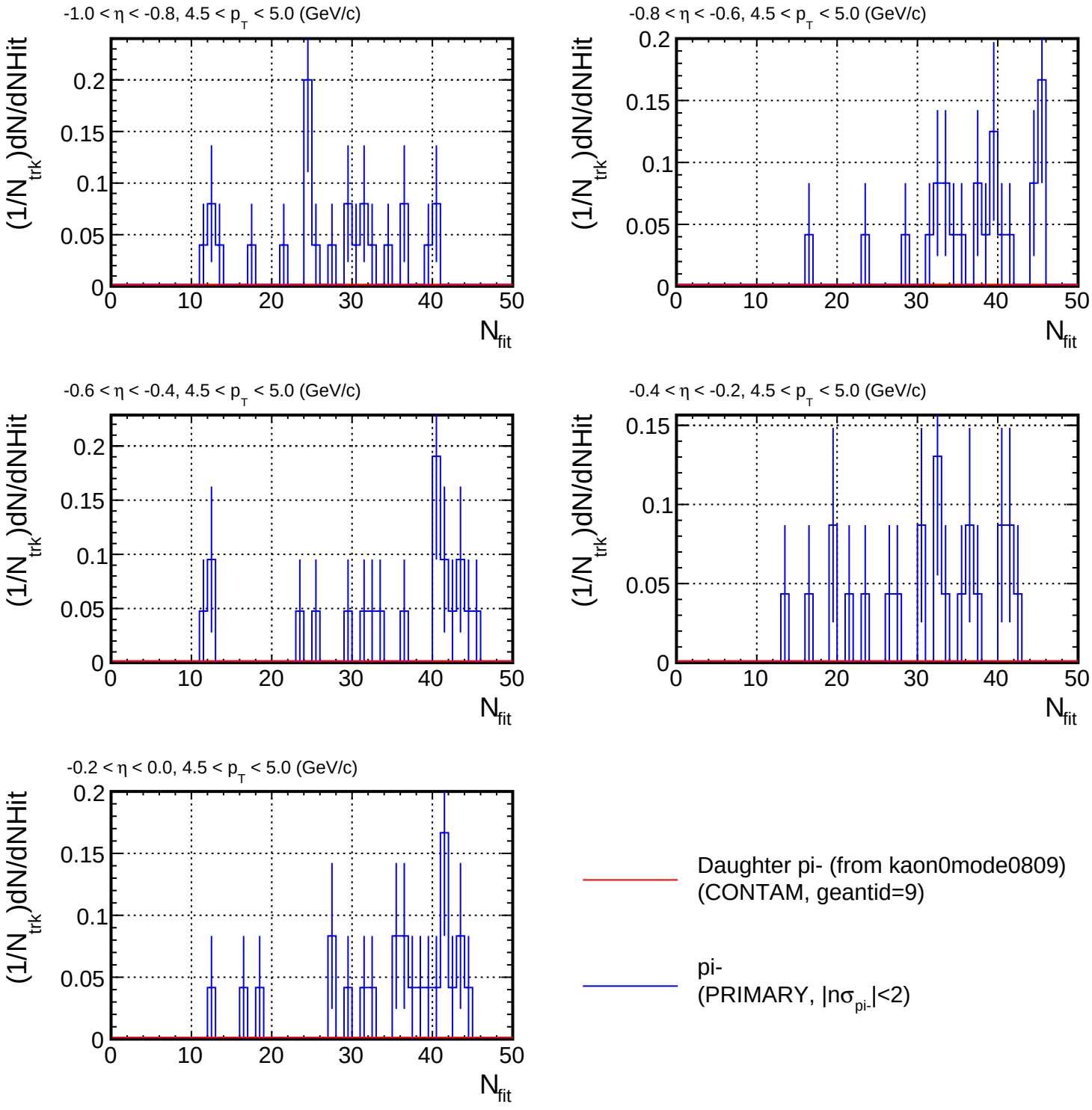
NHit distribution for (p_T, η) slices



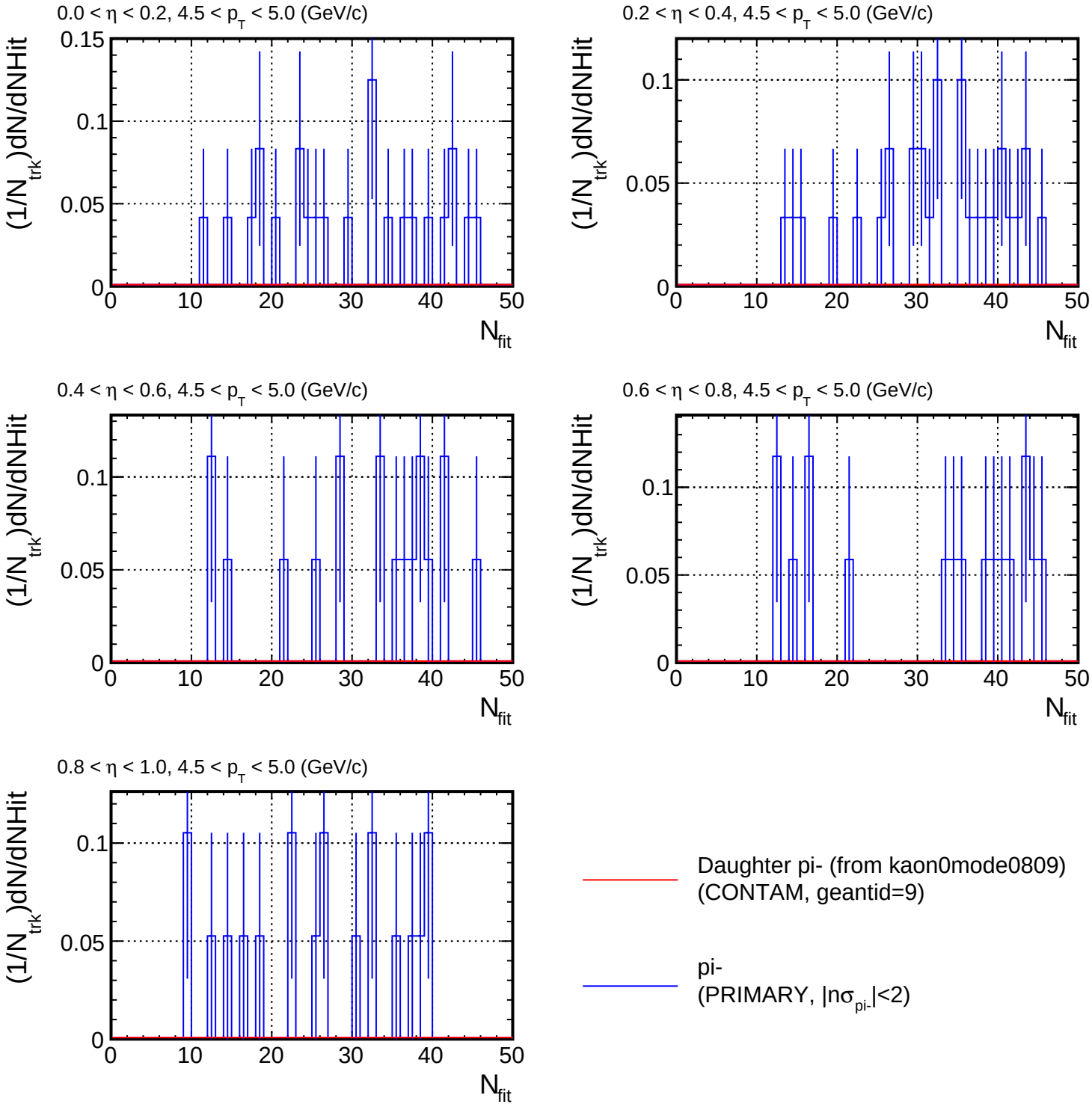
NHit distribution for (p_T, η) slices



NHit distribution for (p_T, η) slices



NHit distribution for (p_T, η) slices



End of QA