first update $K_s^o \rightarrow \pi^+\pi^-$ reco requirements

Cut name	Value	comments
evt→NBTrk	$\geq$1	
Radius (XY)	$<$1.5 cm	relative to center of tgt

Table 1: Beam track selection

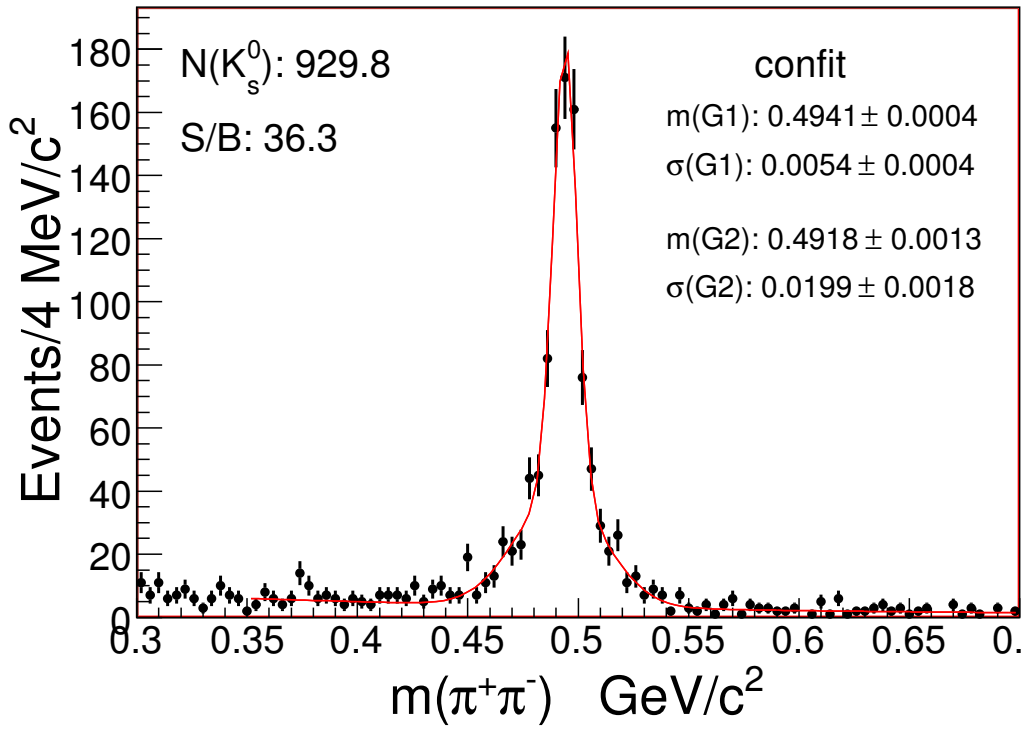
Cut name	Value	comments
vtx→vtxtype	any	any multi-track
vtx→ntrk	$\geq$3	no.of trks per primary vtx
trk→ntpchit	$\geq$10	no.of TPC hits
trk→gof	$\geq$0.001	goodness of fit
vtx XY radius	$<$1.5 cm	relative to center of tgt
vtx Z pos	loose	+2 cm to tgt edges

Table 2: Requirements for the K_s^o's production vertex

Cut name	Value	comments
vtx→vtxtype	2	select the sec. vertex
vtx→ntrk	2	no.of trks per sec. vtx
Z_{sec}	any	
trk→ntpchit	$\geq$15	no.of TPC hits
$q_1 * q_2$	-1	opposite sign pair
$p_T(K_s^o)$	$\geq$0.01 GeV/c	
$p_{tot}(K_s^o)$	$\geq$0.8 GeV/c	
$ip(K_s^o)$w.r.to PV	$<$1.2 cm	NEW

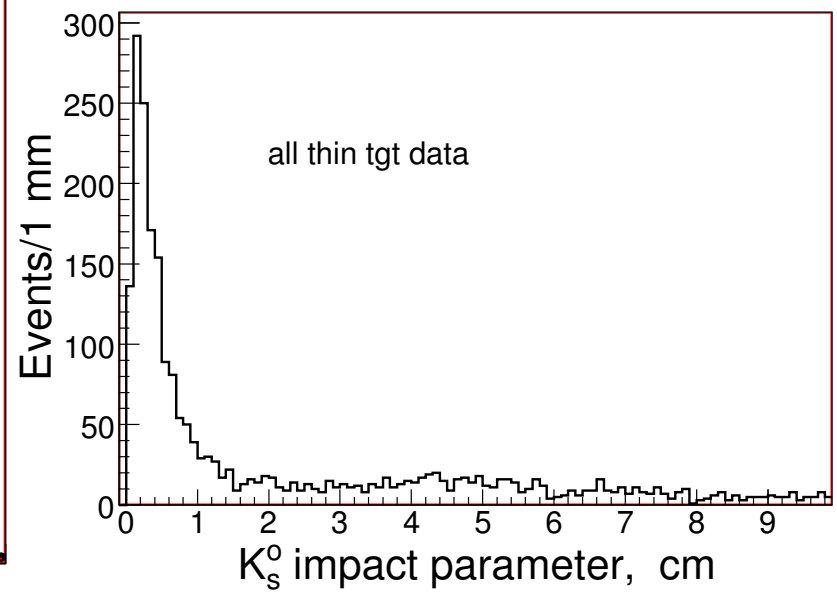
Table 3: Requirements for the K_s^o's decay vertex

$K_s^o \rightarrow \pi^+\pi^-$ reco results



Mass distribution of $\pi^+\pi^-$ pairs from K_s^o decays using all thin target data (H_2 included).

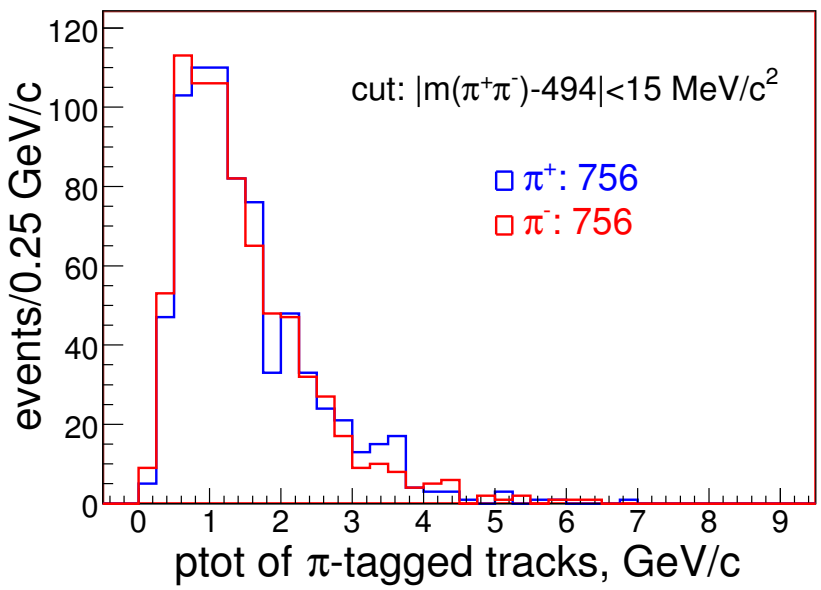
Previous S/B ratio was 13, now 36.

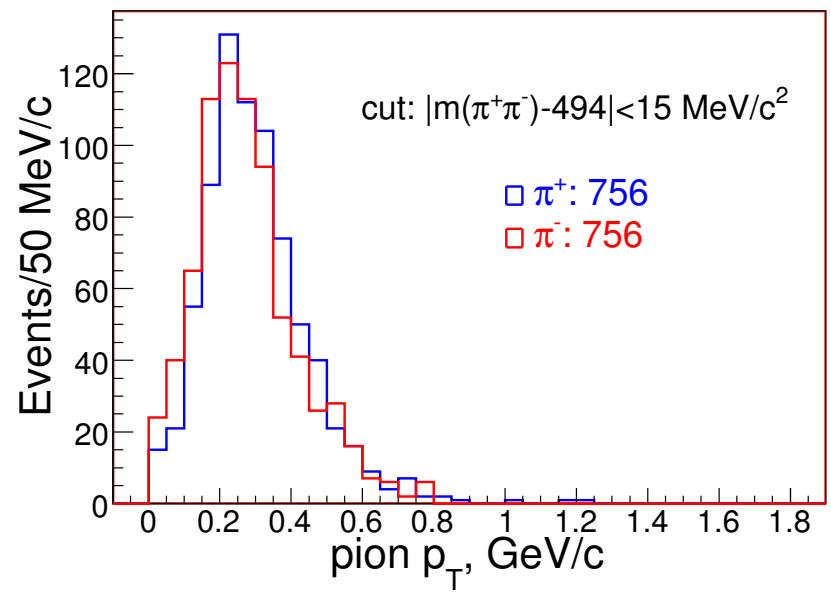


K_s^o impact parameter distribution for all thin target data (H_2 included).

Cut: ip(K_s^o) <1.2 cm

ptot and p_T of tagged pions

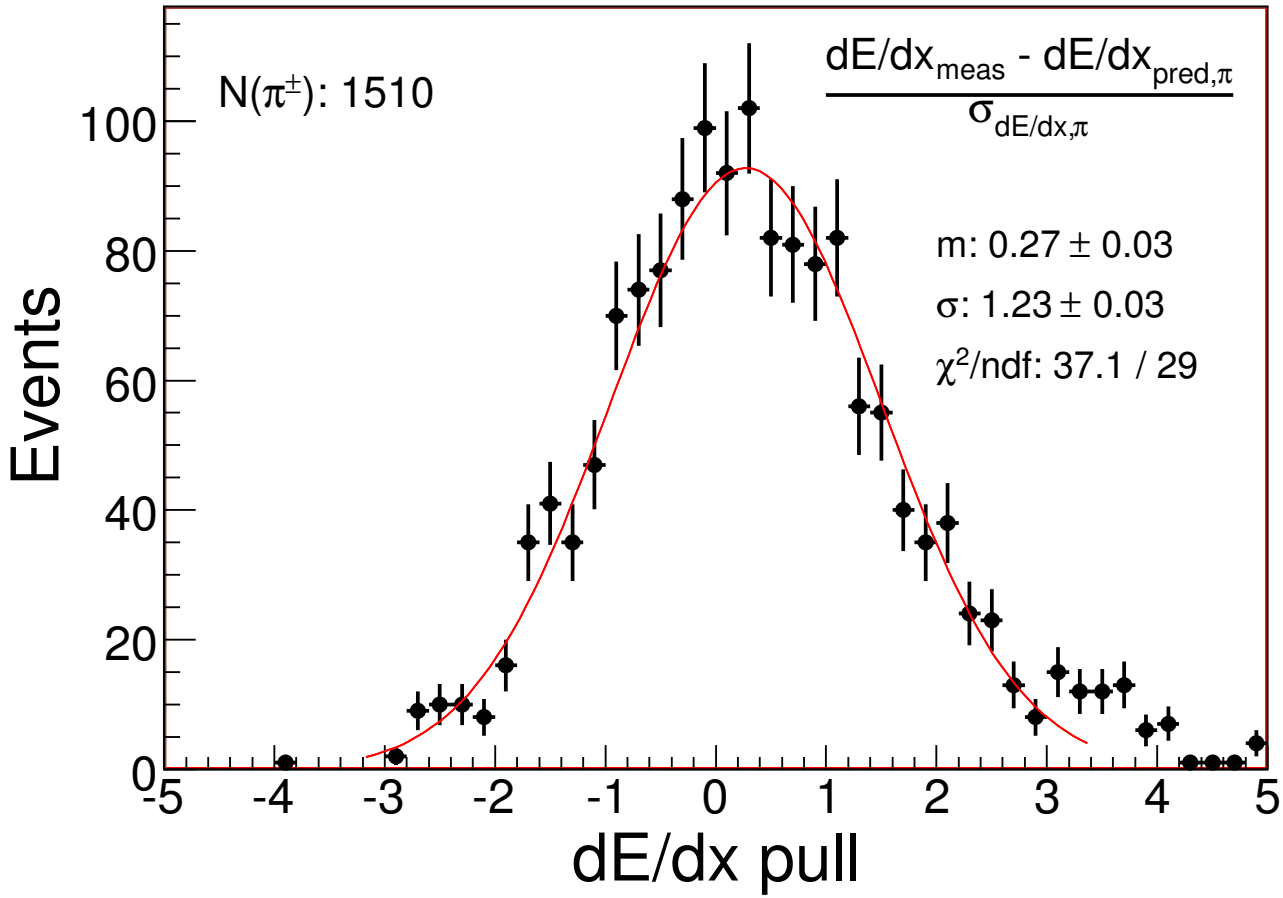




LEFT: ptot distributions of tagged pions from K_s^o decays.

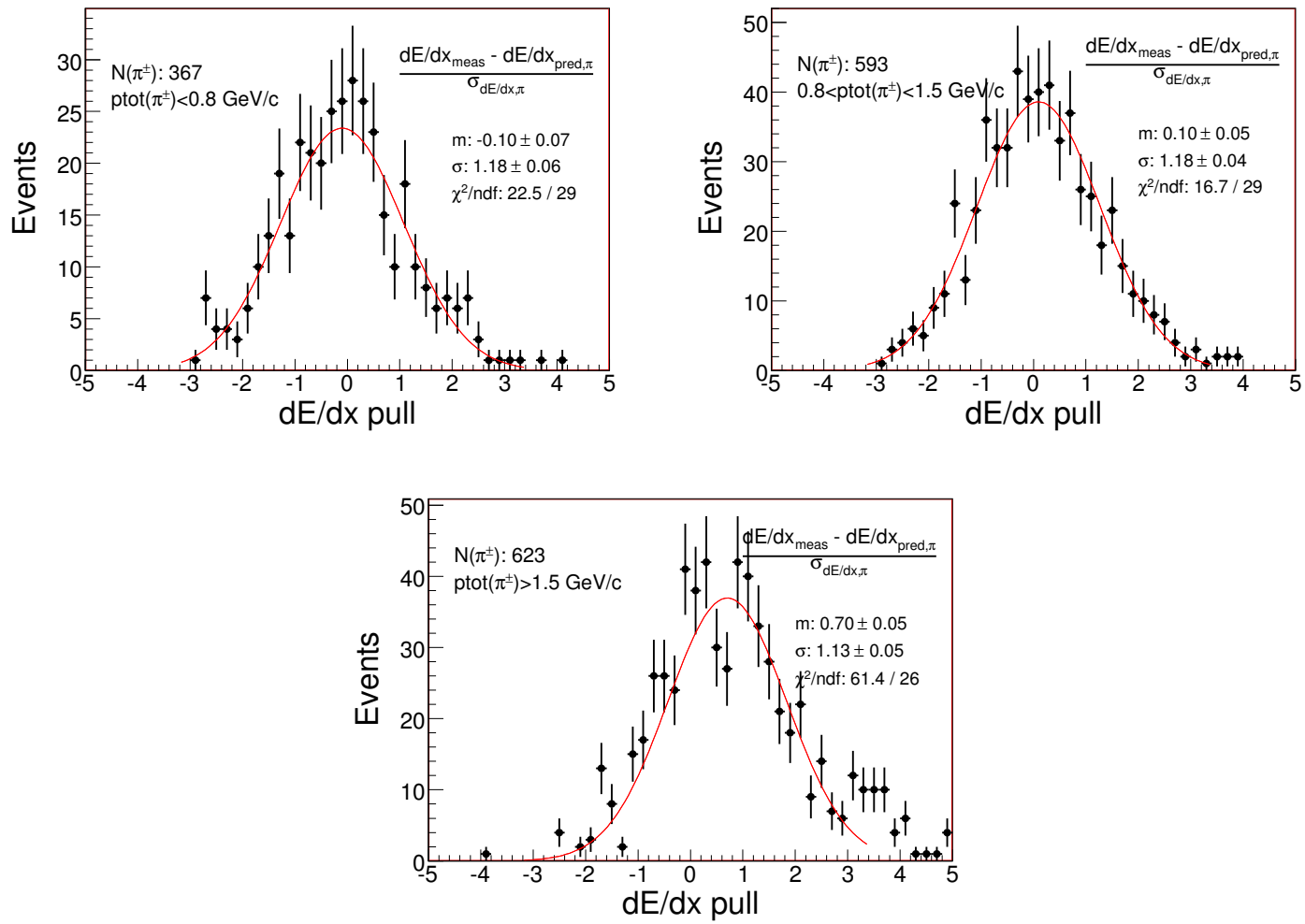
RIGHT: p_T distributions of tagged pions.

update dE/dx test: more statistics



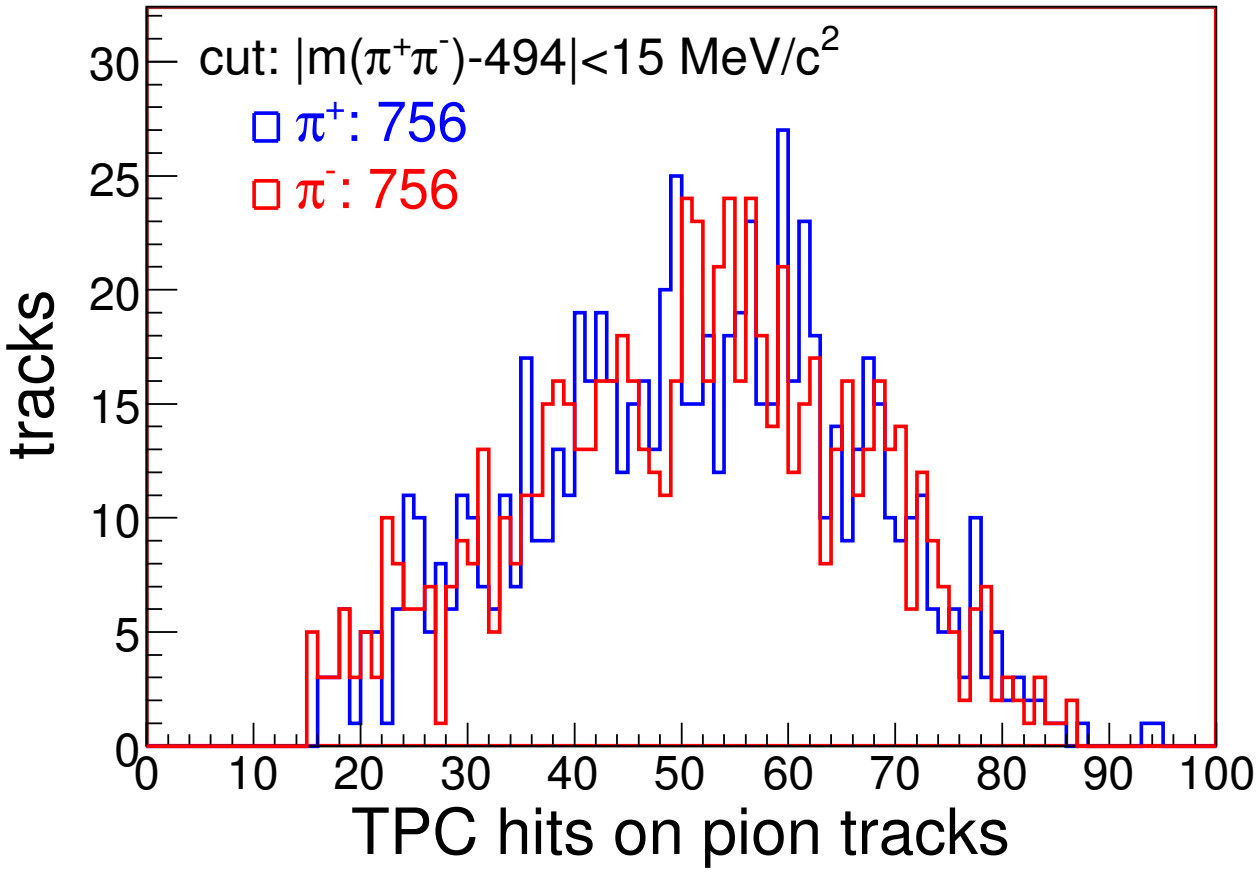
dE/dx pull, $\frac{dE/dx_{meas} - dE/dx_{pred,\pi}}{\sigma_{dE/dx,\pi}}$, distribution calculated using the tagged pions from K_s^o decays. If calibration done properly, then the fit results expected to be as m=0 and σ=1

update momentum dependence

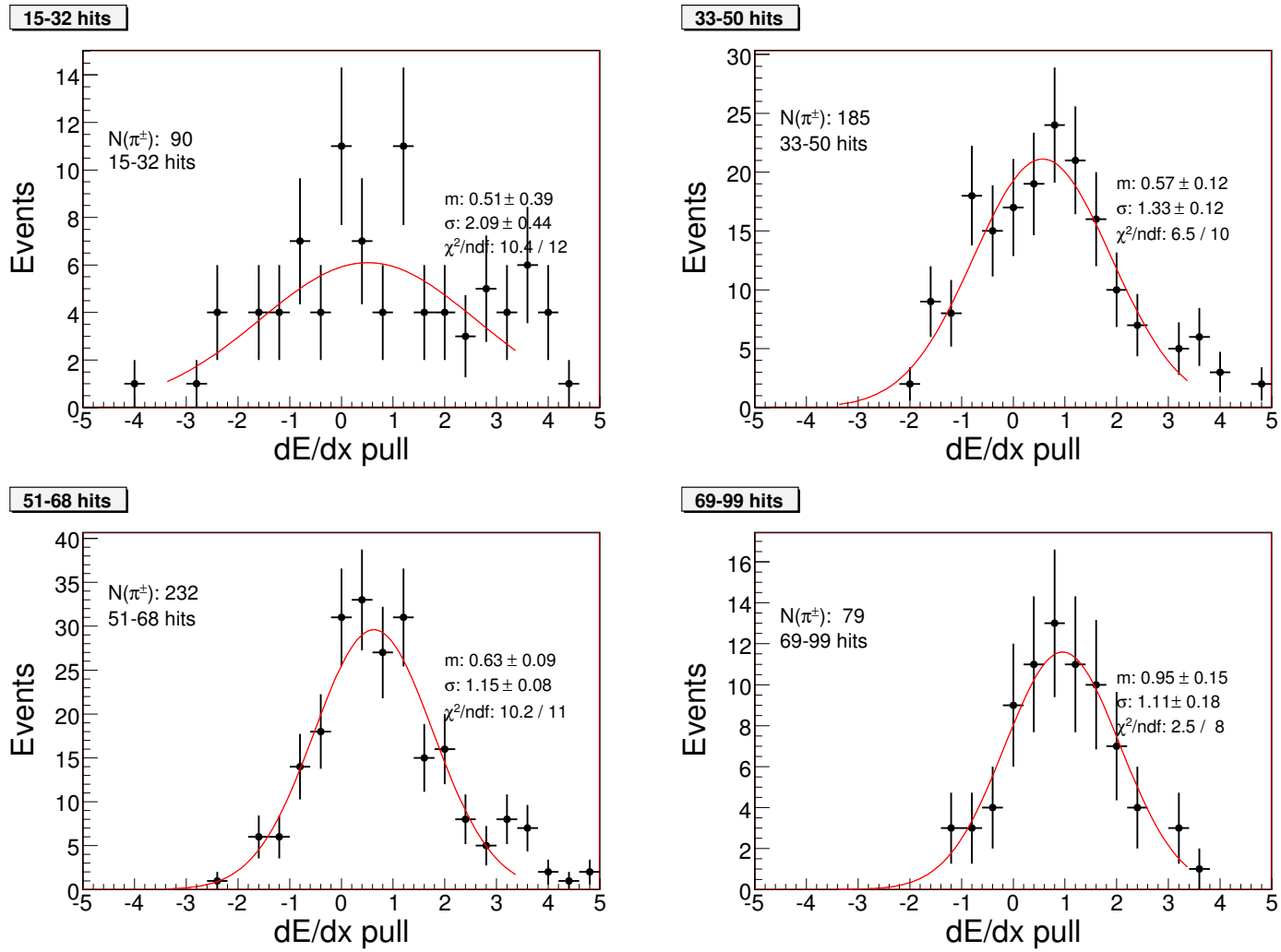


dE/dx pull distributions for pion's $ptot$ <0.8 GeV/c (UPPER LEFT), 0.8< $ptot$ <1.5 GeV/c (UPPER RIGHT) and $ptot$ >1.5 GeV/c (BOTTOM).

number TPC hits on pion tracks



Durga: is any hits dependence?



dE/dx test summary

	N	Mean	Width, σ
0 $<$ptot$<$ 0.8 GeV/c	367	-0.10$\pm$0.07	1.18$\pm$0.06
0.8 $<$ptot$<$ 1.5 GeV/c	593	0.10$\pm$0.05	1.18$\pm$0.04
ptot$>$ 1.5 GeV/c	623	0.70$\pm$0.05	1.13$\pm$0.05

Table 4: dE/dx test results for different pions momentum ranges.

hits range	N	Mean	Width, σ
15 - 32	90	0.51$\pm$0.39	2.09$\pm$0.44
33 - 50	185	0.57$\pm$0.12	1.33$\pm$0.12
51 - 68	232	0.63$\pm$0.09	1.15$\pm$0.08
69 - 99	79	0.95$\pm$0.15	1.11$\pm$0.18

Table 5: dE/dx test results vs the number of hits on pion tracks