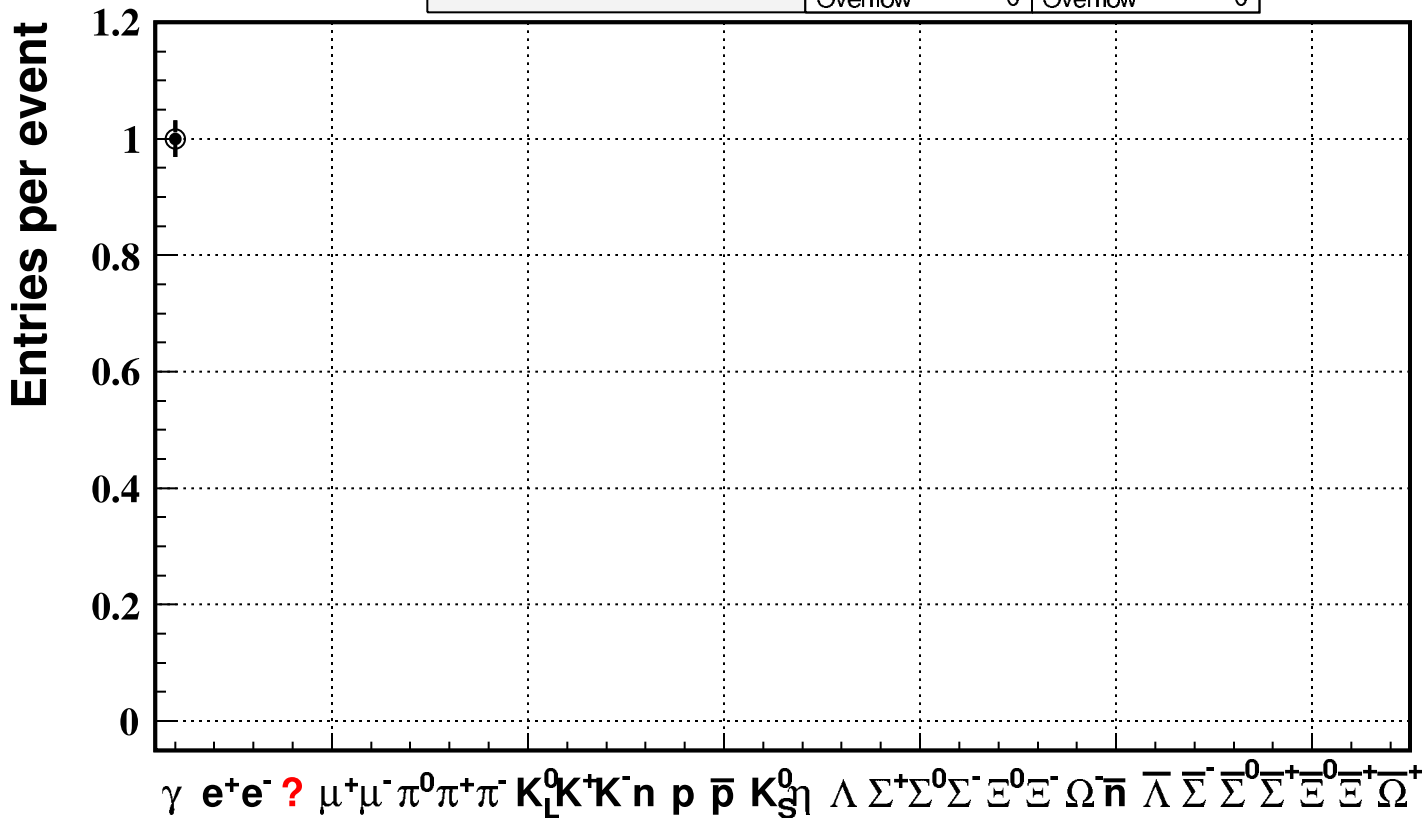


100 GeV Primary γ
Primary IP

• **GEANT4**

○ **GEANT3**

GEANT4		GEANT3	
Entries	1000	Entries	1000
Mean	1	Mean	1
RMS	0	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

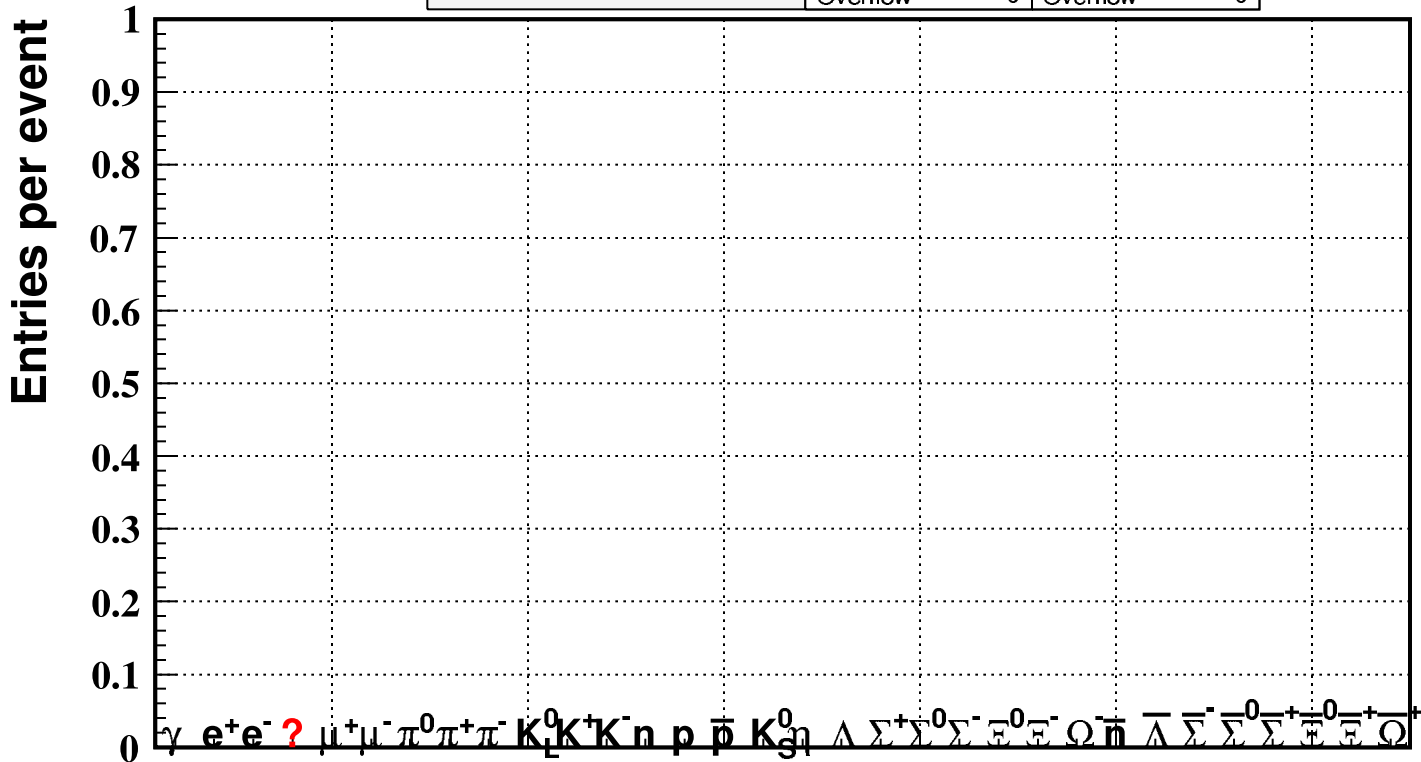


100 GeV Primary γ
Primary

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	0	0
Mean	0	0
RMS	0	0
Underflow	0	0
Overflow	0	0



100 GeV Primary γ
Secondary

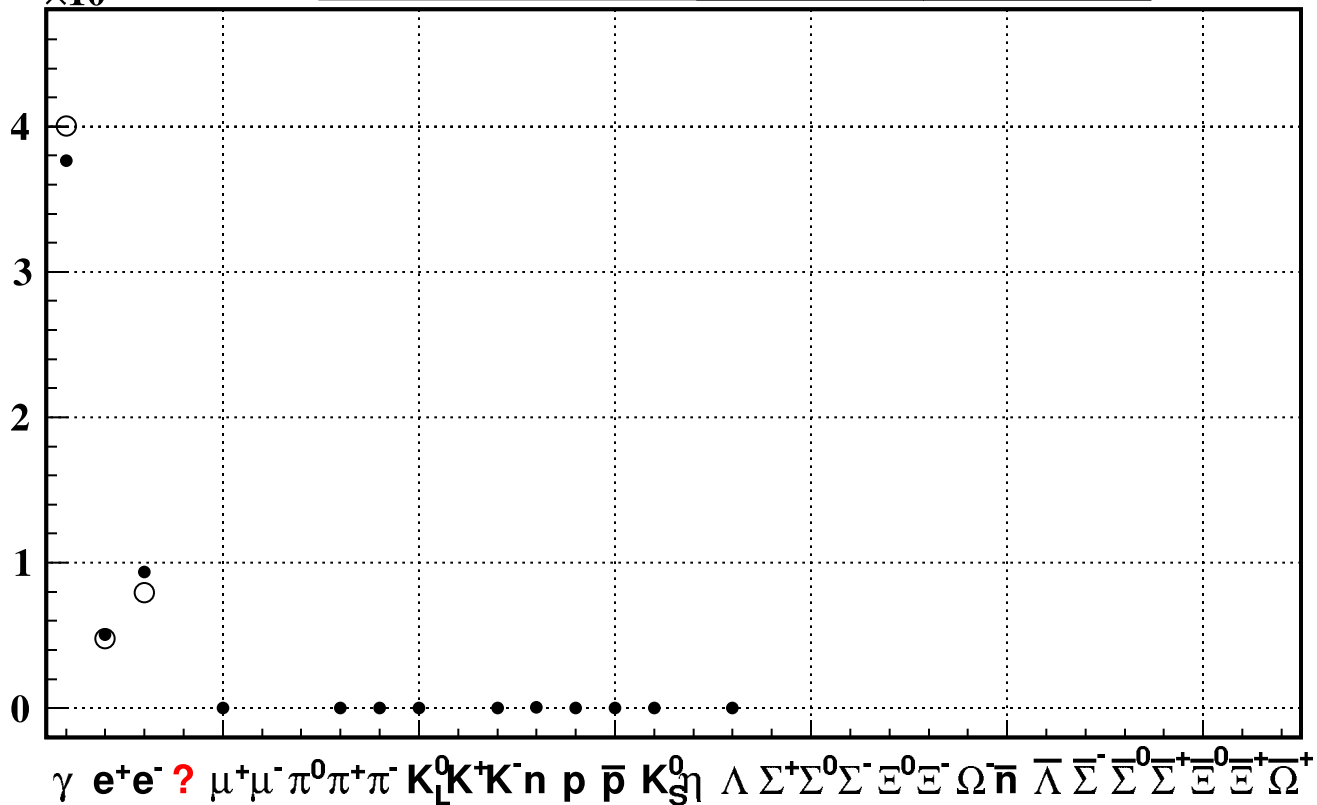
• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	5214884	Entries	5274786
Mean	1.47	Mean	1.39
RMS	0.889	RMS	0.734
Underflow	0.026	Underflow	0
Overflow	0	Overflow	0

Entries per event

$\times 10^3$

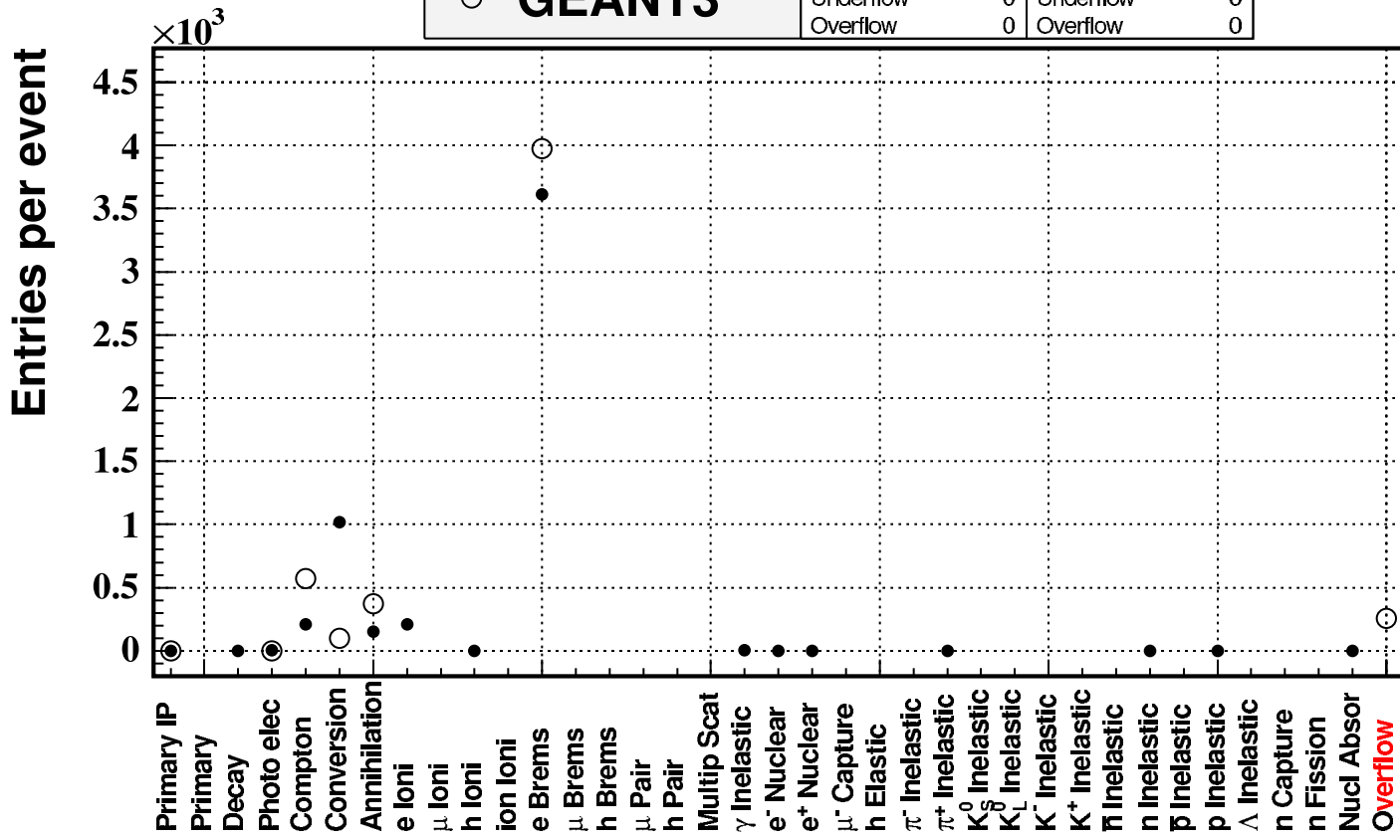


100 GeV Primary γ

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	5215884	5275786
Mean	8.24	9.98
RMS	2.72	6.16
Underflow	0	0
Overflow	0	0

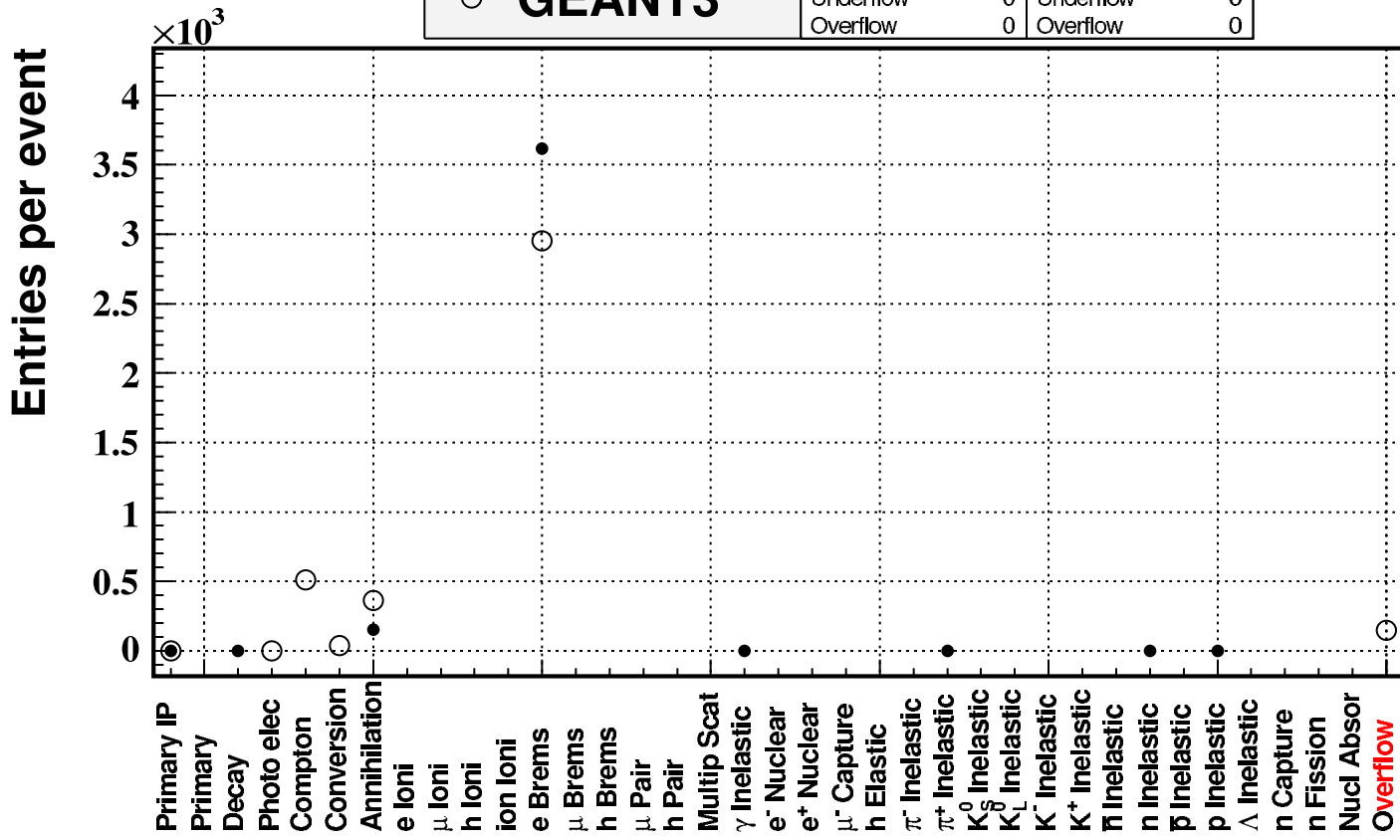


100 GeV Primary γ
 γ

• GEANT4

○ GEANT3

	GEANT4	GEANT3	
Entries	3767386	Entries	4006133
Mean	9.8	Mean	9.51
RMS	1.01	RMS	5.6
Underflow	0	Underflow	0
Overflow	0	Overflow	0

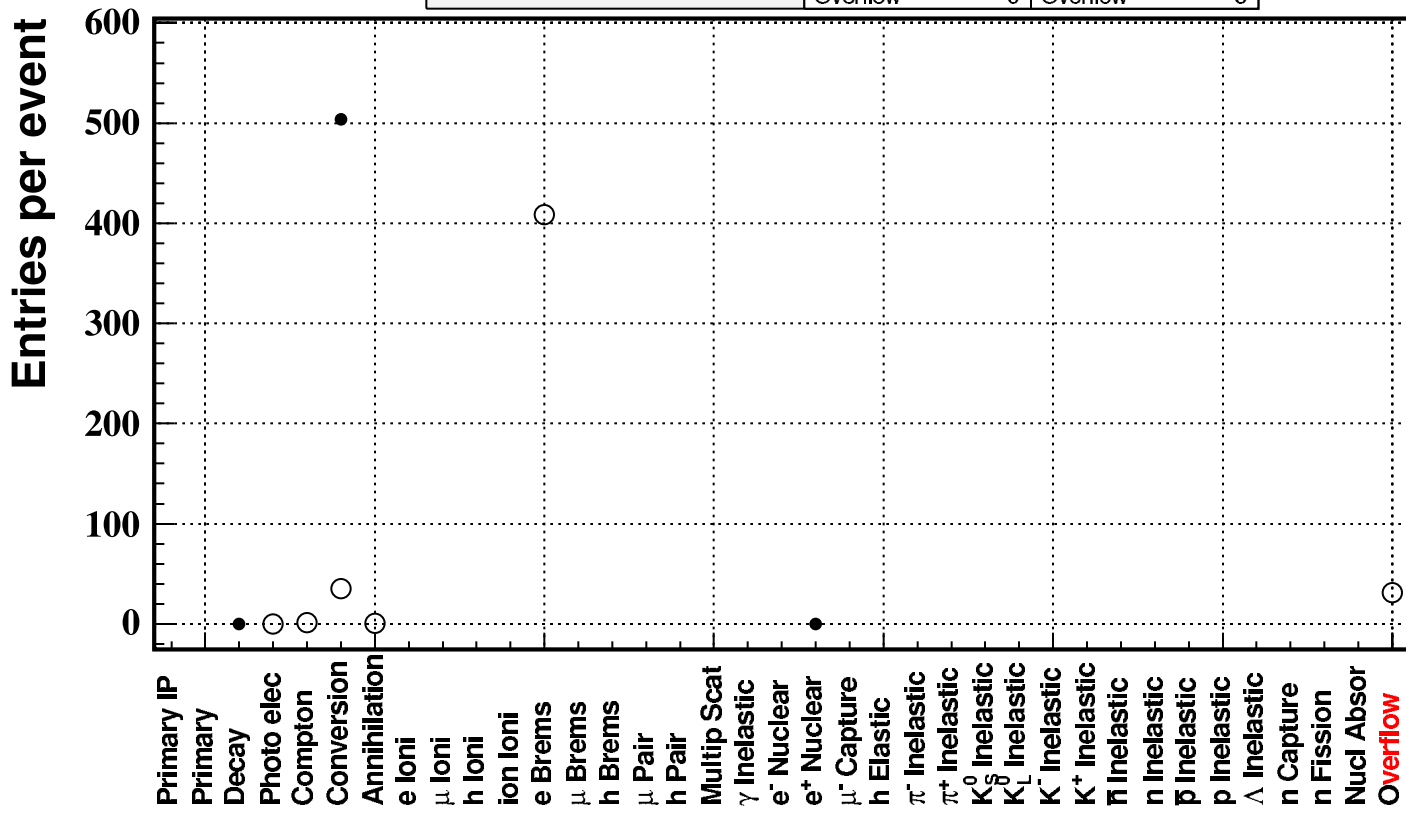


100 GeV Primary γ
 e^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	503677	476162
Mean	4	11.2
RMS	0.119	6.49
Underflow	0	0
Overflow	0	0



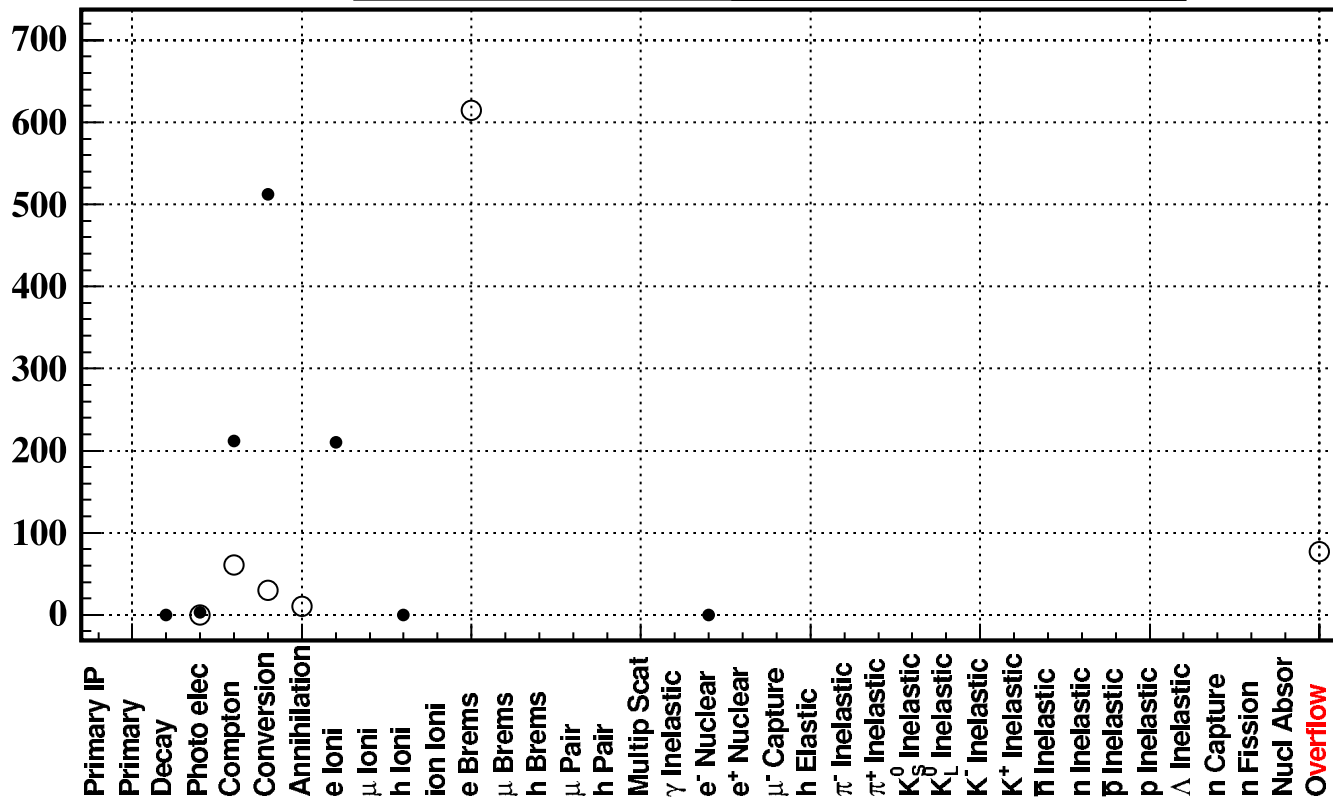
100 GeV Primary γ
e⁻

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	937687	793491
Mean	4.22	11.6
RMS	1.05	7.99
Underflow	0	0
Overflow	0	0

Entries per event



100 GeV Primary γ

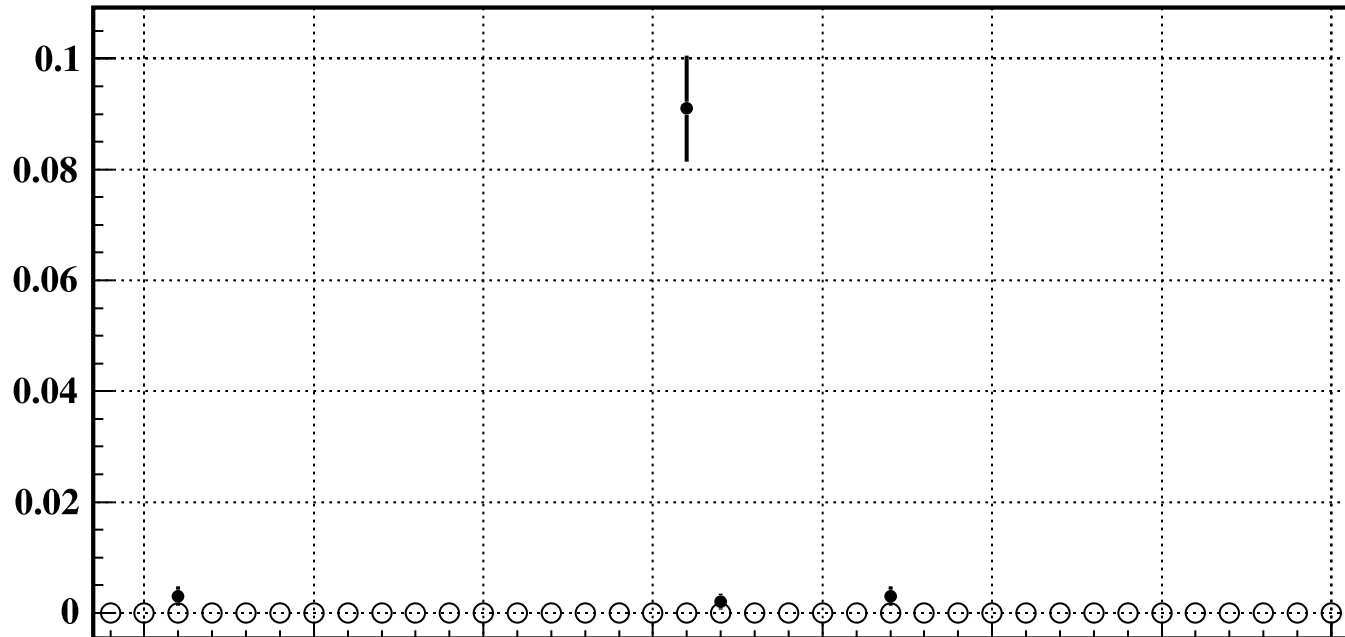
π^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	99	0
Mean	15.7	0
RMS	2.8	0
Underflow	0	0
Overflow	0	0

Entries per event



100 GeV Primary γ

π^-

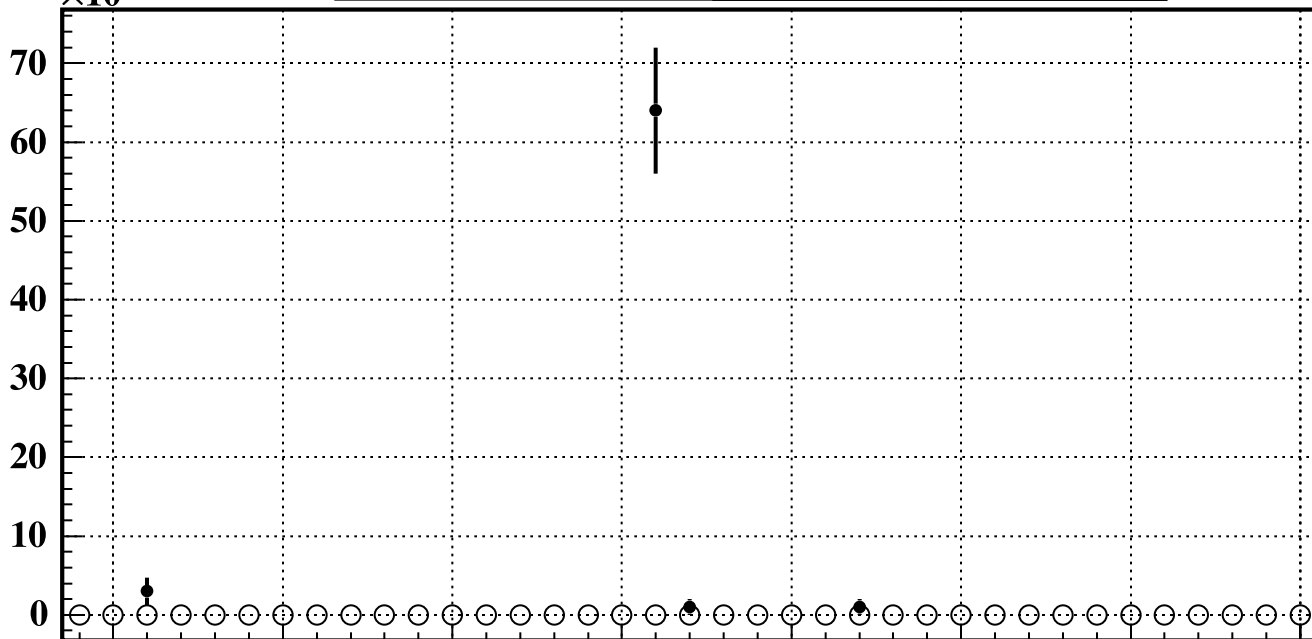
• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	69	Entries	0
Mean	15.4	Mean	0
RMS	3.16	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event

$\times 10^{-3}$



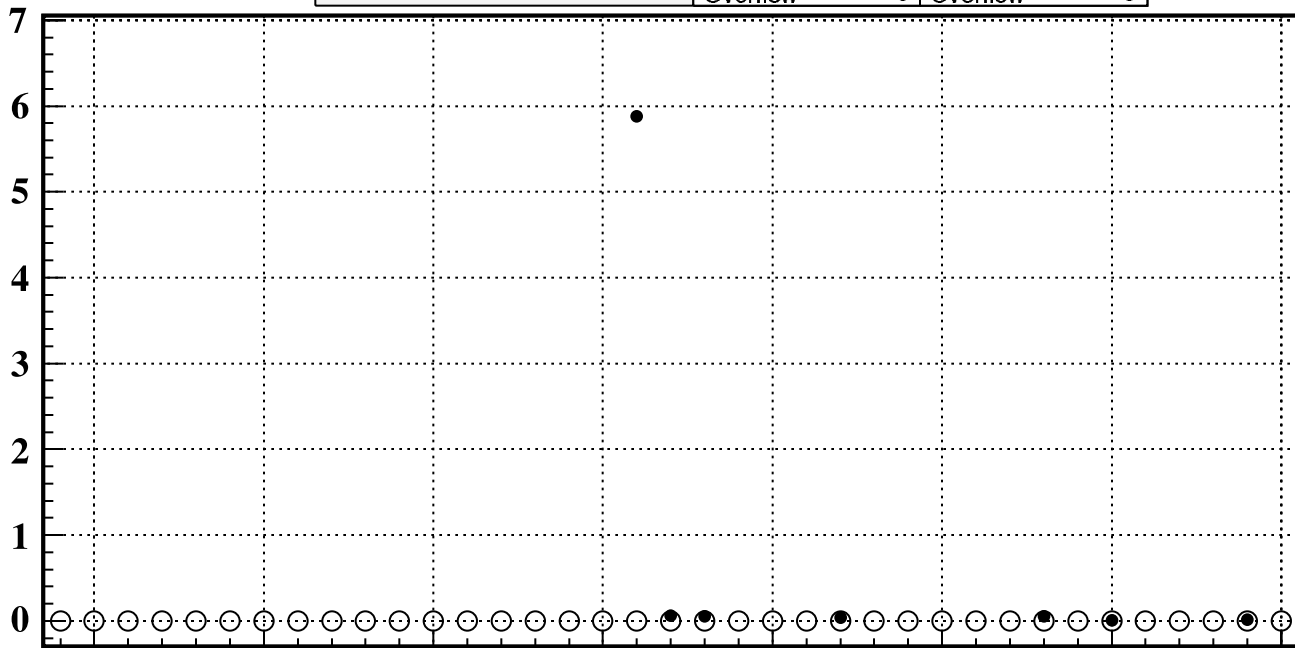
100 GeV Primary γ
n

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	6099	0
Mean	16.2	0
RMS	1.59	0
Underflow	0	0
Overflow	0	0

Entries per event



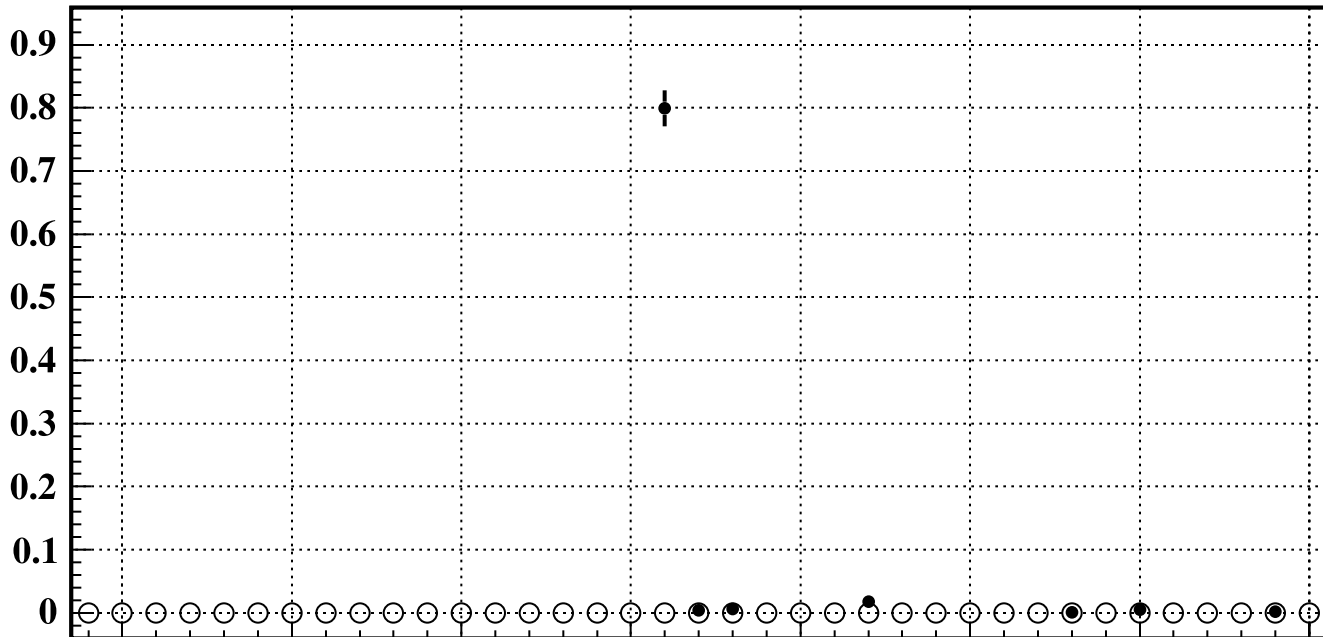
100 GeV Primary γ
p

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	835	0
Mean	16.3	0
RMS	1.69	0
Underflow	0	0
Overflow	0	0

Entries per event

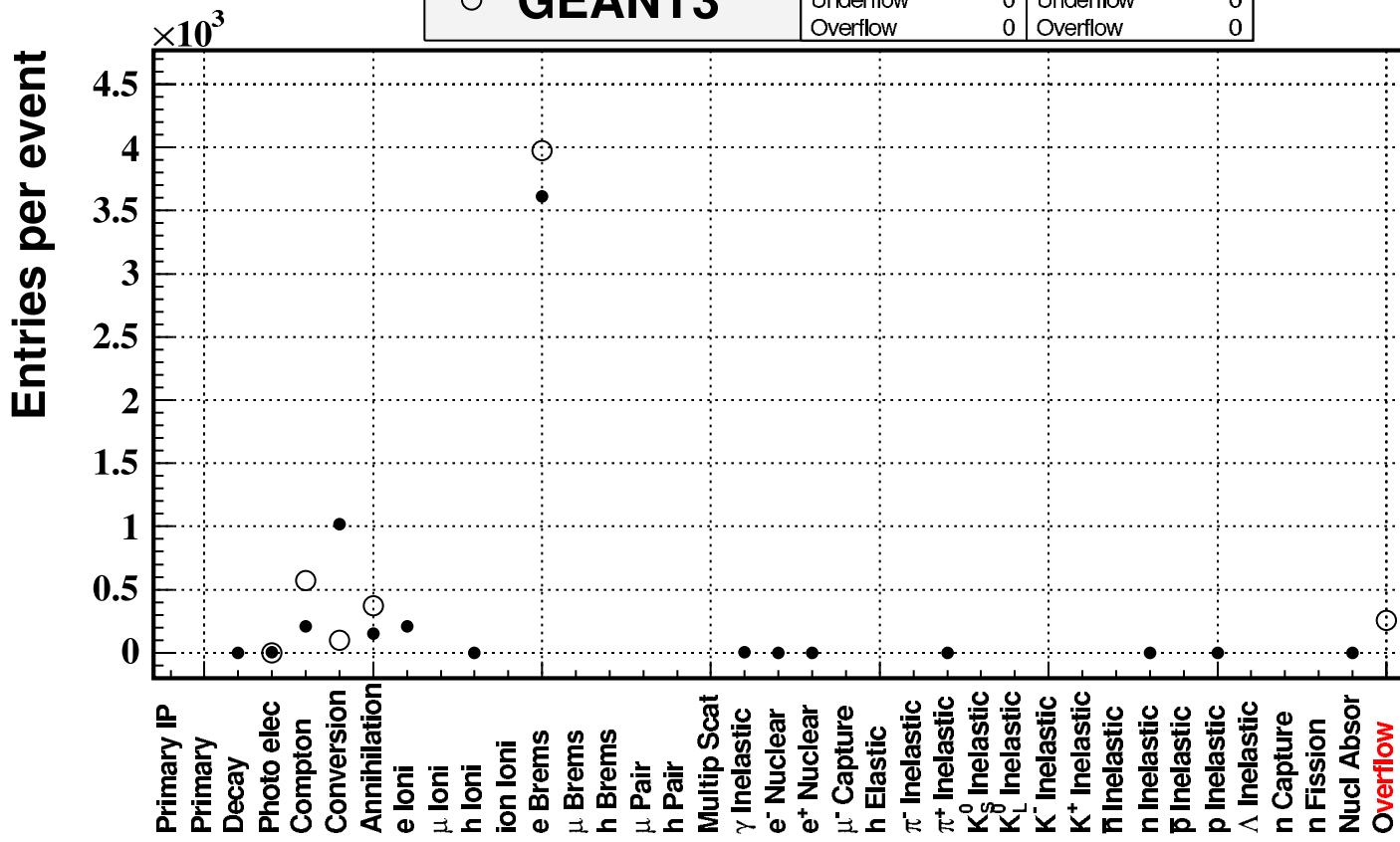


100 GeV Primary γ
Secondary

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	5214884	5274786
Mean	8.24	9.98
RMS	2.72	6.16
Underflow	0	0
Overflow	0	0

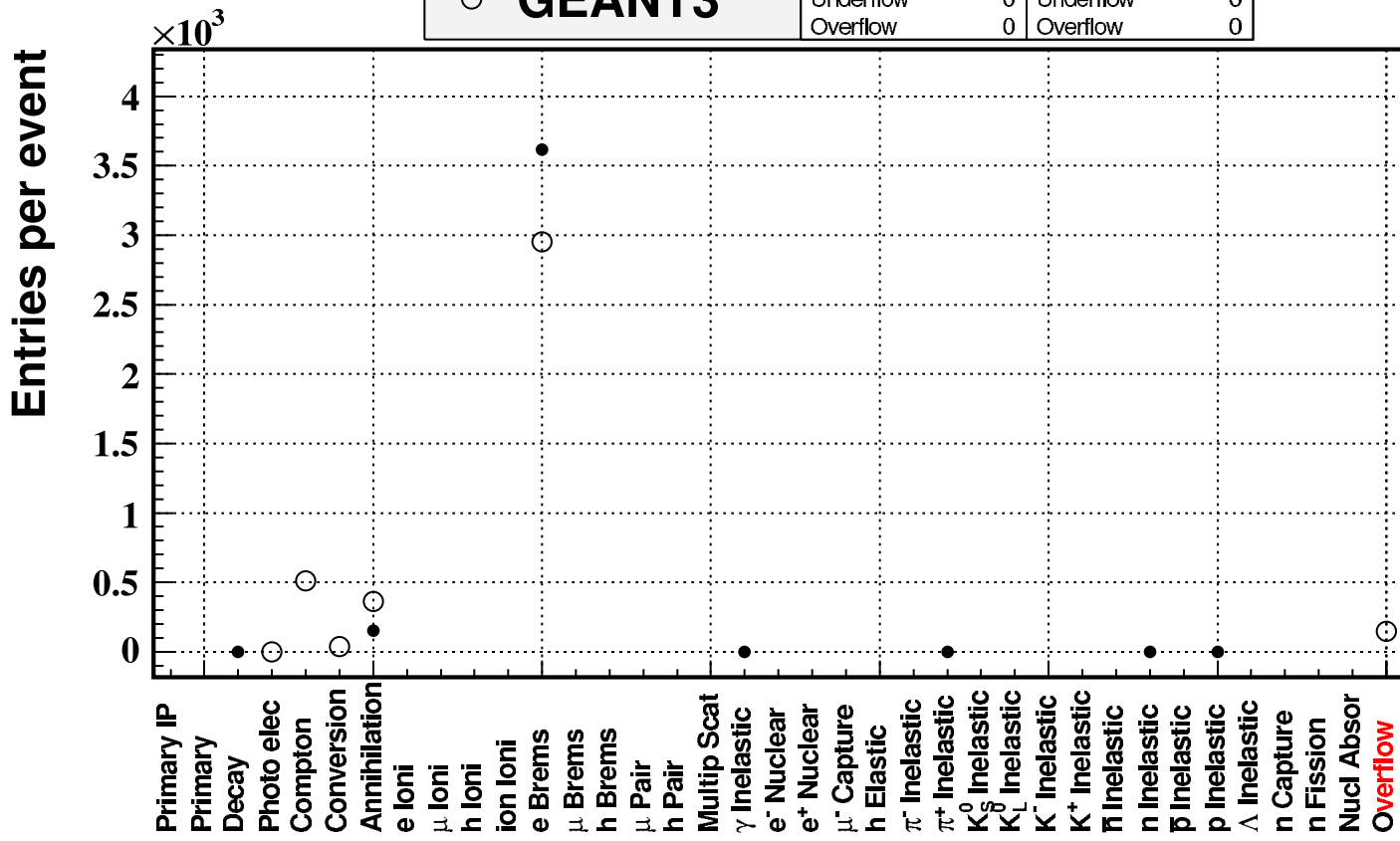


100 GeV Primary γ
Secondary γ

● GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	3766386	4005133
Mean	9.8	9.52
RMS	0.99	5.6
Underflow	0	0
Overflow	0	0

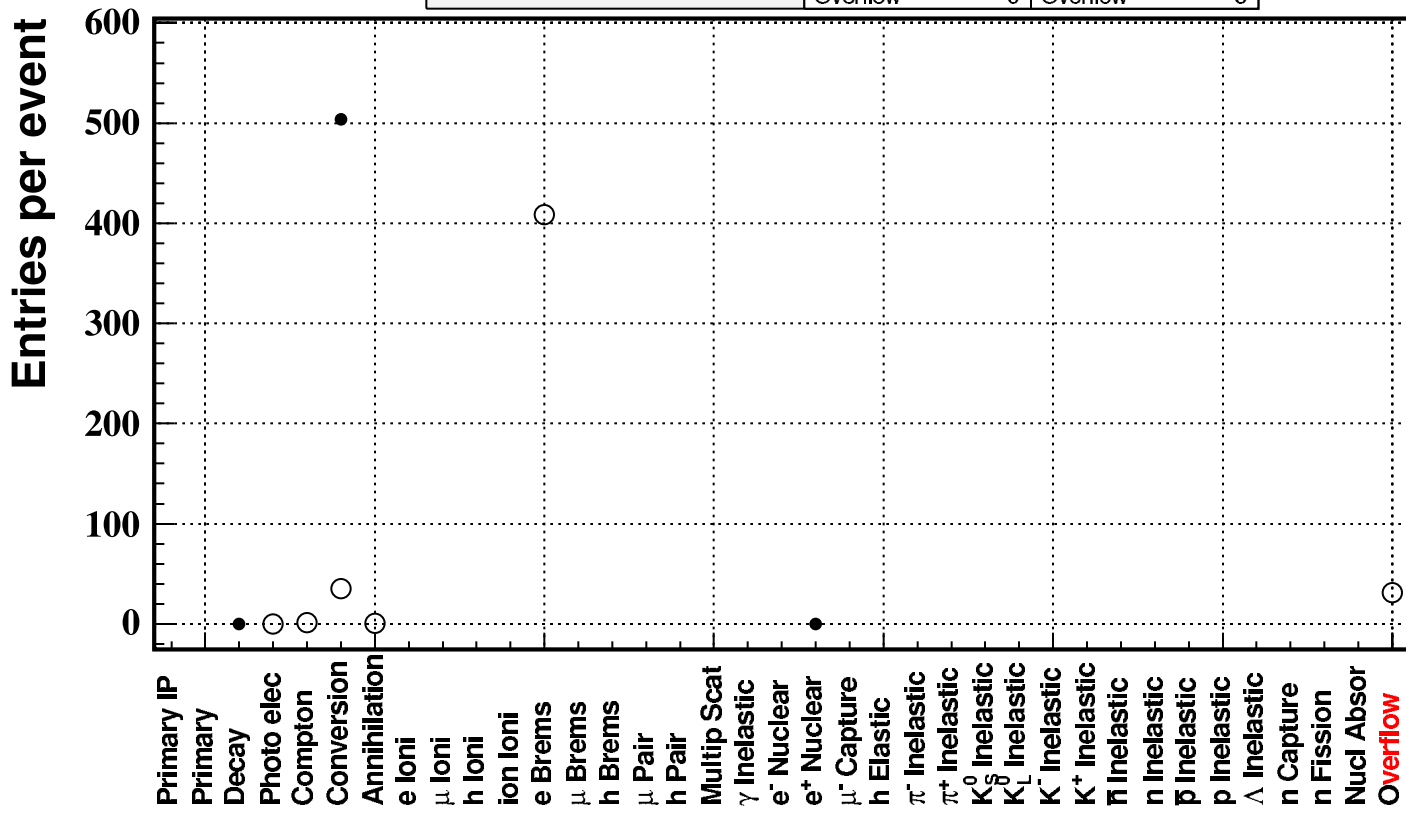


100 GeV Primary γ
Secondary e^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	503677	476162
Mean	4	11.2
RMS	0.119	6.49
Underflow	0	0
Overflow	0	0



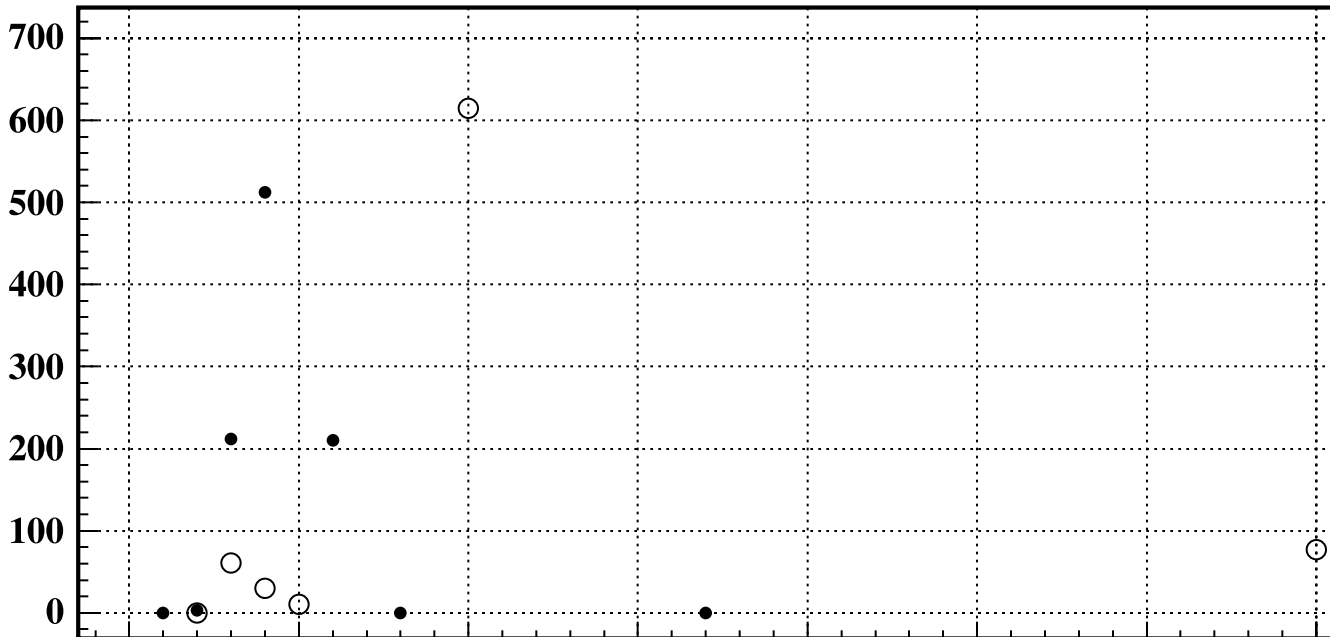
100 GeV Primary γ
Secondary e^-

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	937687	793491
Mean	4.22	11.6
RMS	1.05	7.99
Underflow	0	0
Overflow	0	0

Entries per event



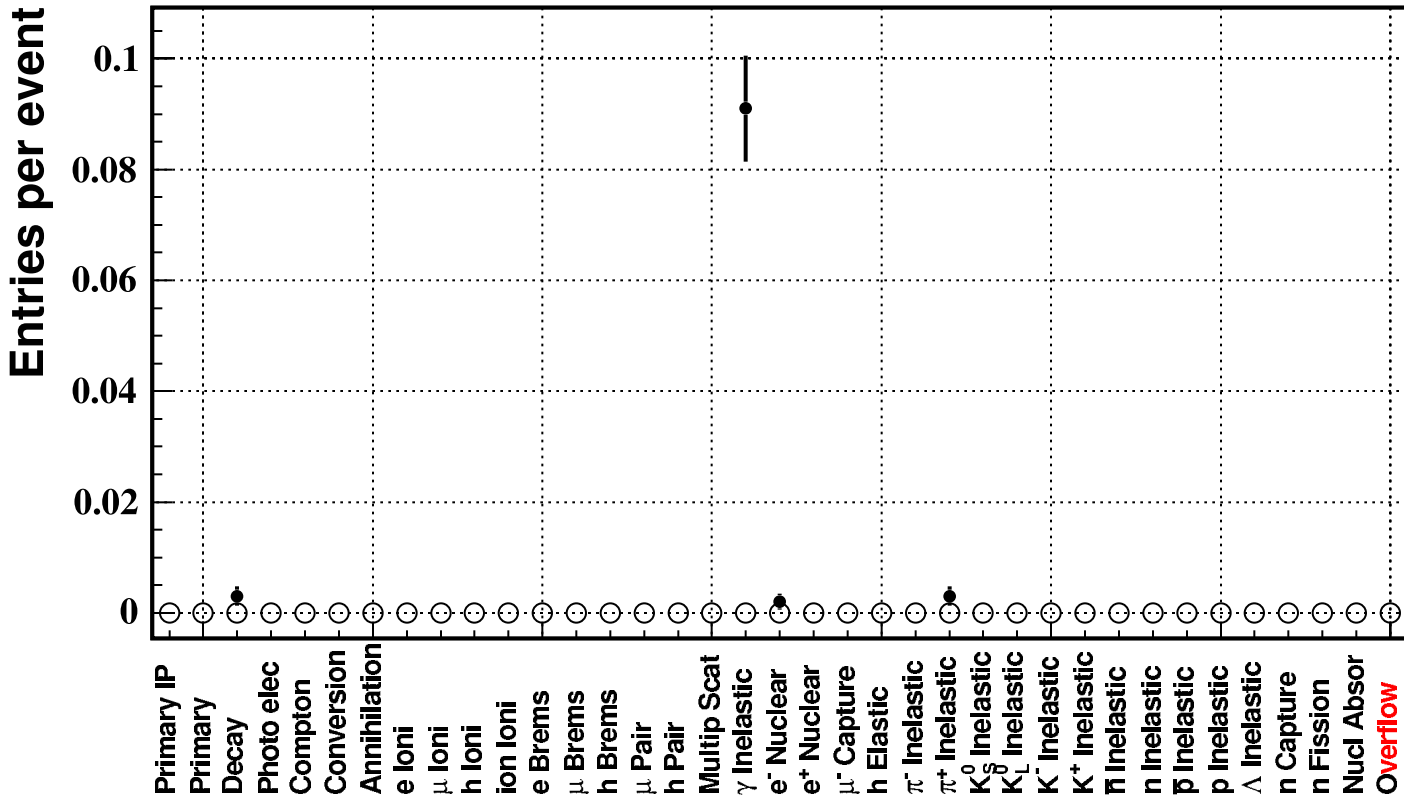
Primary IP
Primary
Decay
Photo elec
Compton
Conversion
Annihilation
e Ioni
 μ Ioni
h Ioni
ion Ioni
e Brems
 μ Brems
h Brems
 μ Pair
h Pair
Multip Scat
 γ Inelastic
e⁻ Nuclear
e⁺ Nuclear
 μ^- Capture
h Elastic
 π^+ Inelastic
 π^0 Inelastic
 K_S^0 Inelastic
 K_L^0 Inelastic
 K^+ Inelastic
 K^0 Inelastic
n Inelastic
p Inelastic
 Λ Inelastic
n Capture
n Fission
Nucl Absor
Overflow

100 GeV Primary γ
Secondary π^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	99	0
Mean	15.7	0
RMS	2.8	0
Underflow	0	0
Overflow	0	0

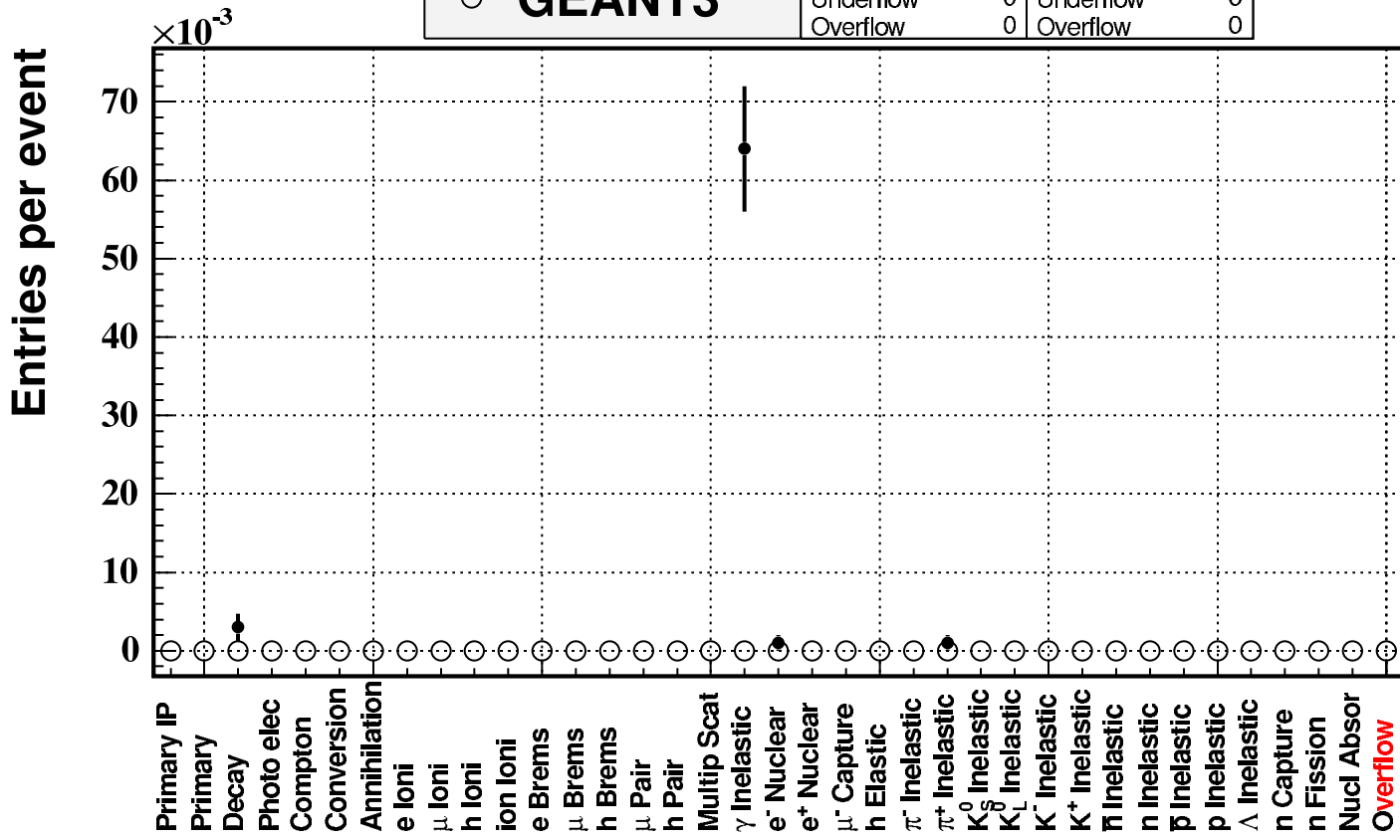


100 GeV Primary γ
Secondary π^-

● GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	69	0
Mean	15.4	0
RMS	3.16	0
Underflow	0	0
Overflow	0	0

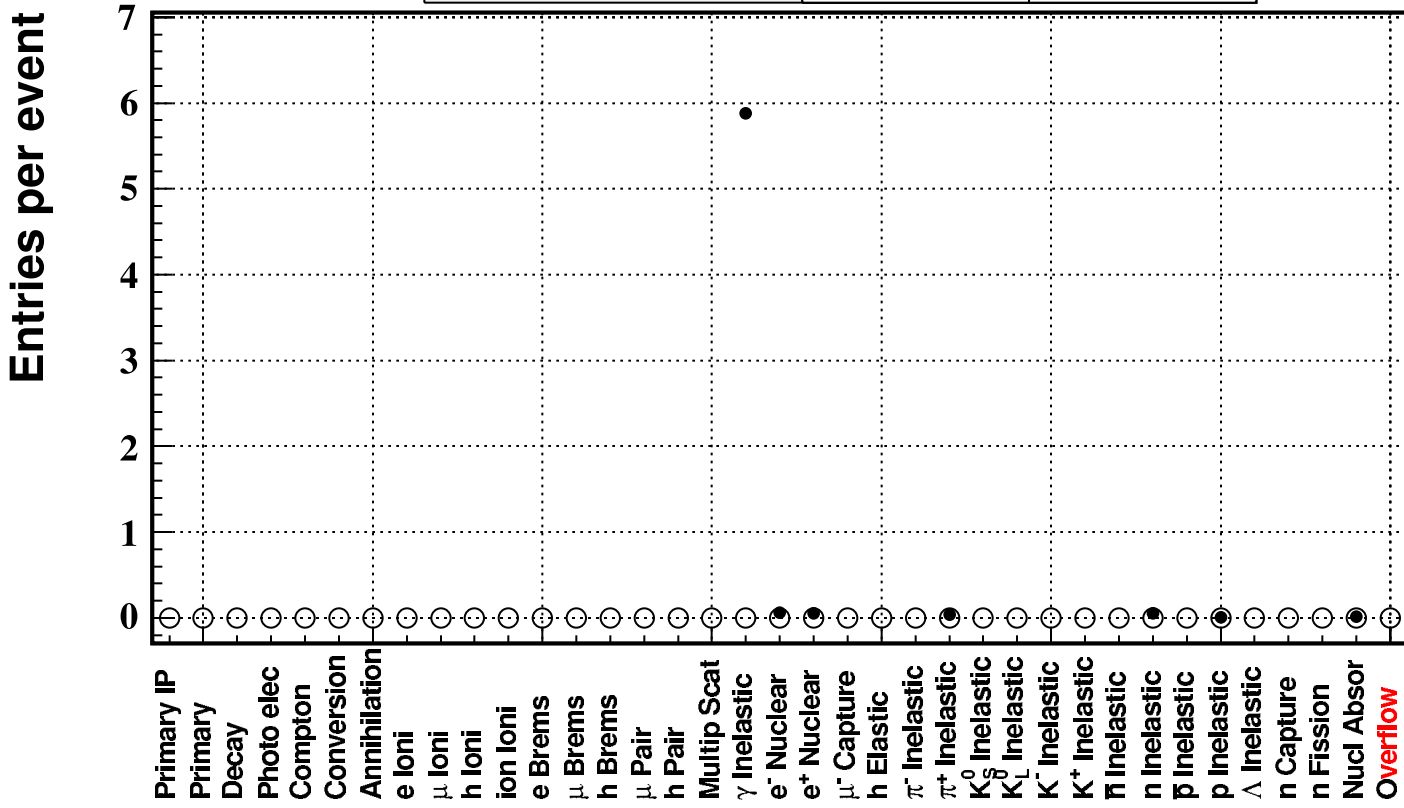


100 GeV Primary γ
Secondary n

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	6099	0
Mean	16.2	0
RMS	1.59	0
Underflow	0	0
Overflow	0	0



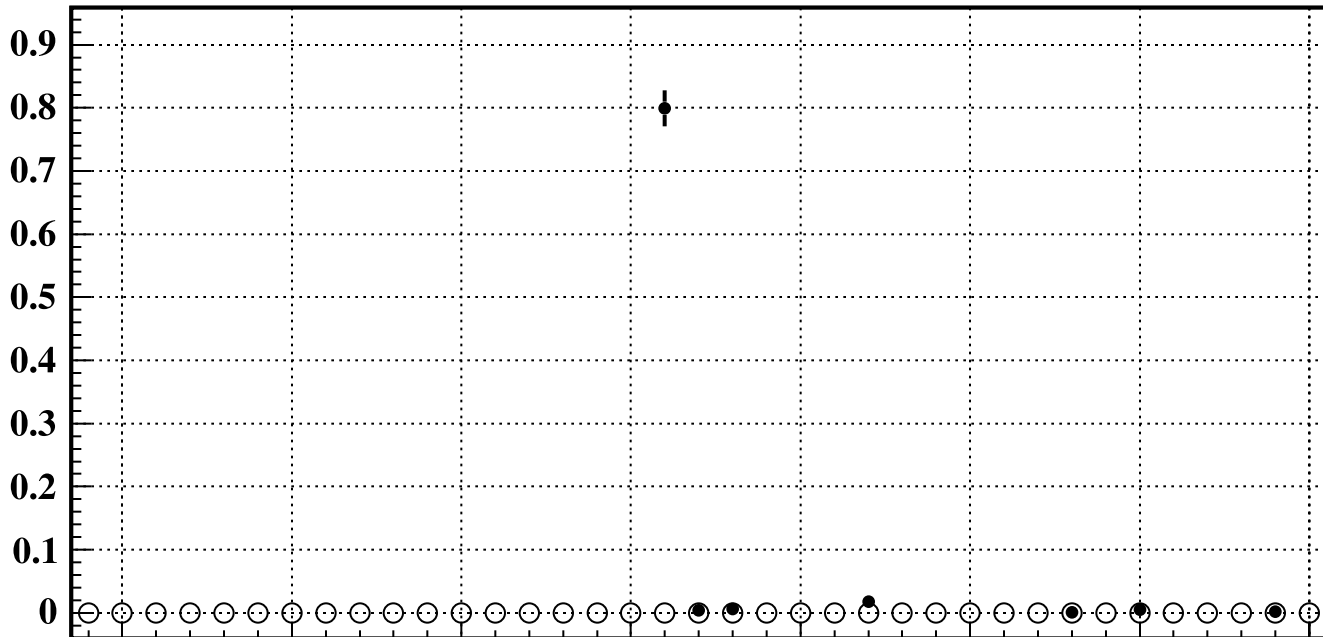
100 GeV Primary γ
Secondary p

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	835	0
Mean	16.3	0
RMS	1.69	0
Underflow	0	0
Overflow	0	0

Entries per event



Primary IP

Primary

Decay

Photo elec

Compton

Conversion

Annihilation

e Ioni

μ Ioni

h Ioni

ion Ioni

e Brems

μ Brems

h Brems

μ Pair

h Pair

Multip Scat

γ Inelastic

e⁻ Nuclear

e⁺ Nuclear

μ ⁻ Capture

h Elastic

π ⁻ Inelastic

π ⁺ Inelastic

K_S⁰ Inelastic

K_L⁻ Inelastic

K⁻ Inelastic

K⁺ Inelastic

\bar{n} Inelastic

n Inelastic

\bar{p} Inelastic

p Inelastic

Λ Inelastic

n Capture

n Fission

Nucl Absor

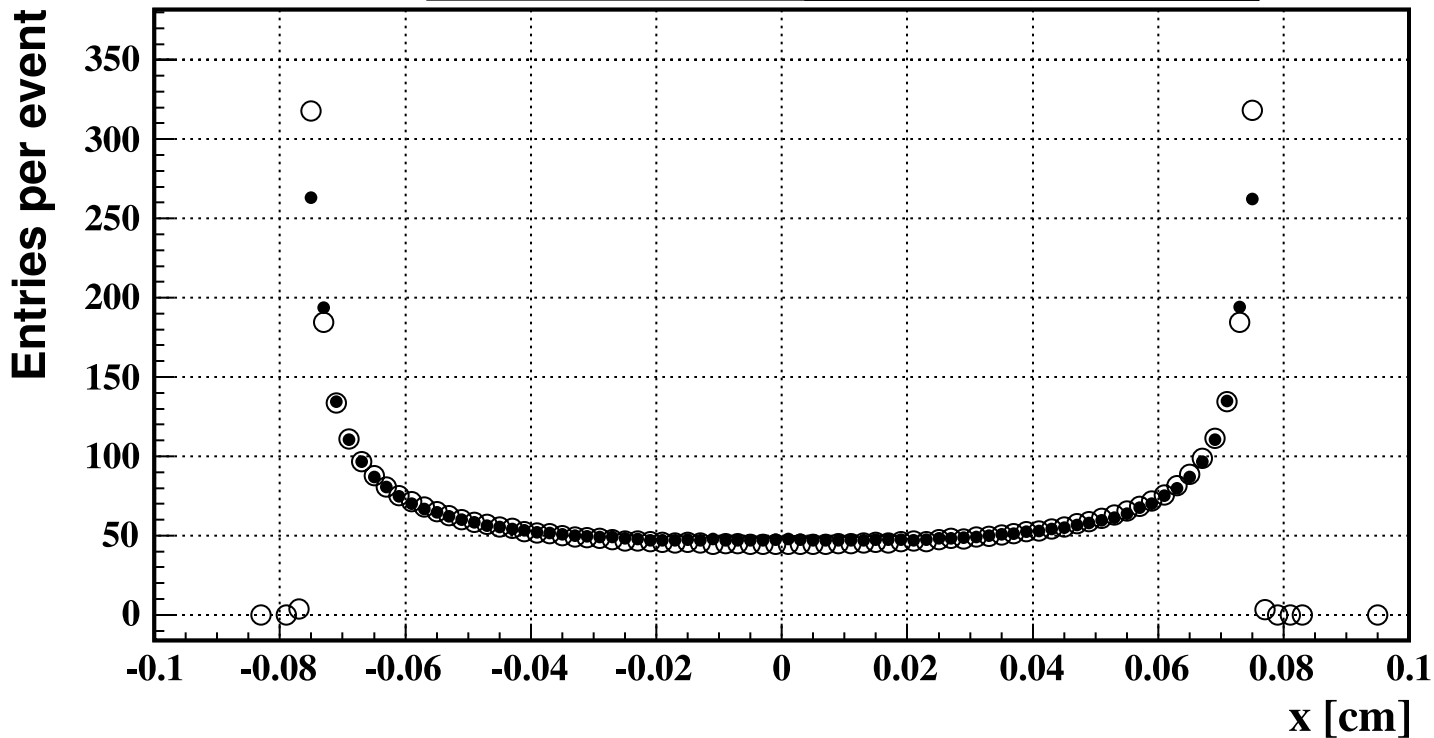
Overflow

100 GeV Primary γ
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	5214884	Entries	5274786
Mean	-2.24e-05	Mean	0.000131
RMS	0.0525	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0.001

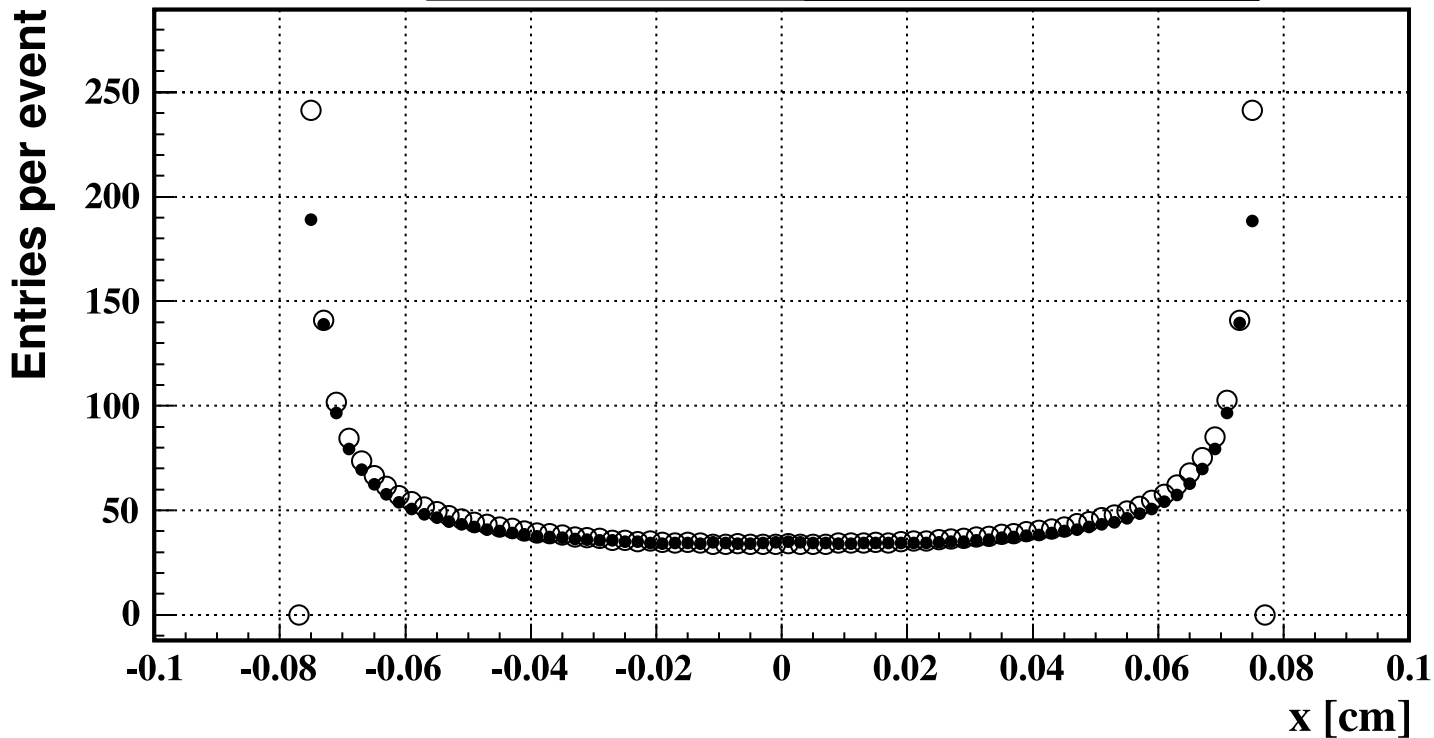


100 GeV Primary γ
Secondary γ

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	3766386	Entries	4005133
Mean	-1.04e-05	Mean	0.000153
RMS	0.0524	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0.001



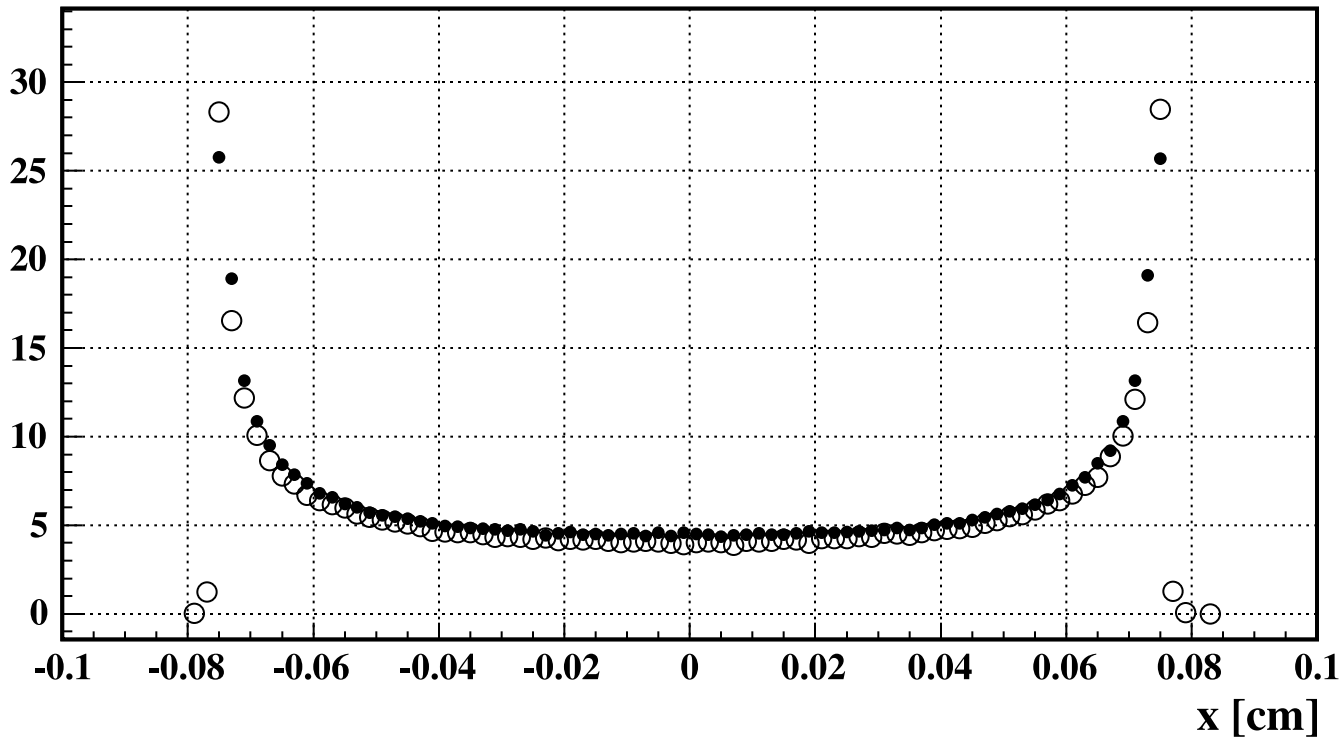
100 GeV Primary γ
Secondary e^+

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	503677	Entries	476162
Mean	-8.08e-05	Mean	-7.48e-06
RMS	0.0527	RMS	0.0534
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event



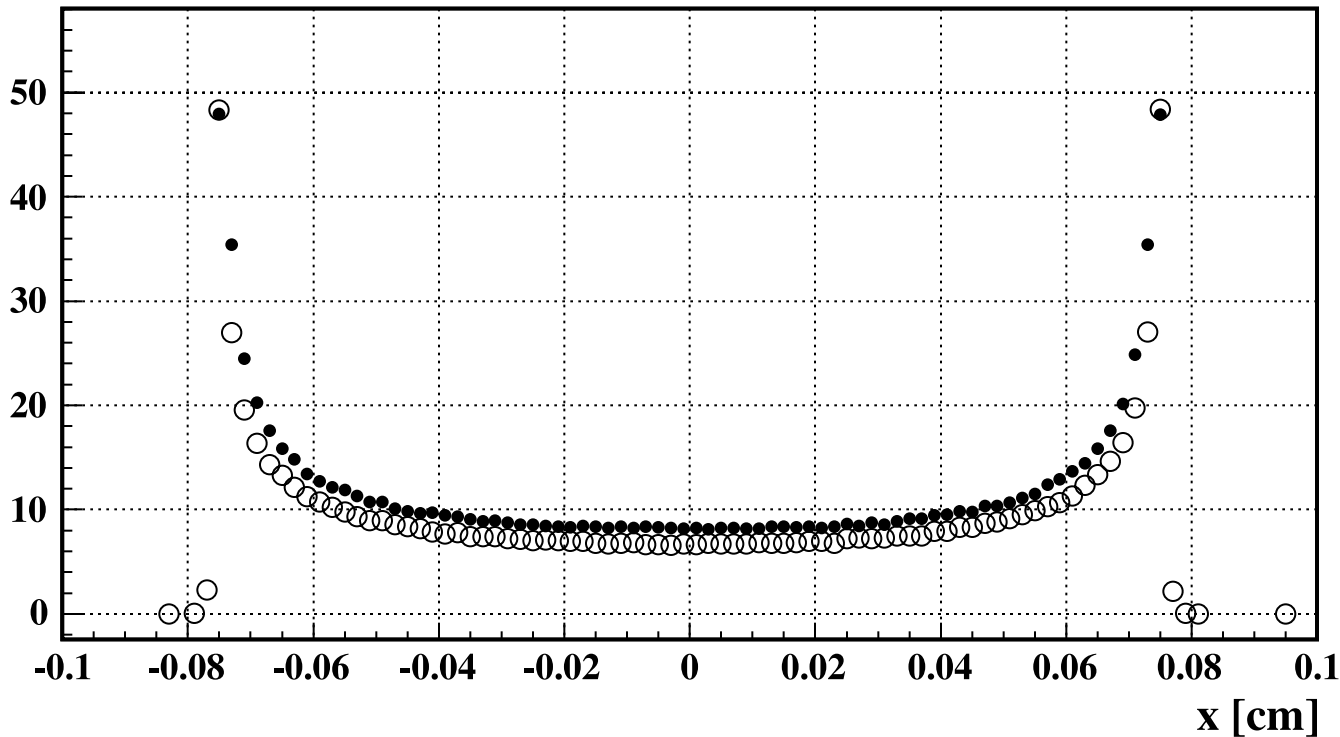
100 GeV Primary γ
Secondary e^-

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	937687	Entries	793491
Mean	-4.16e-05	Mean	0.000102
RMS	0.0528	RMS	0.0534
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event

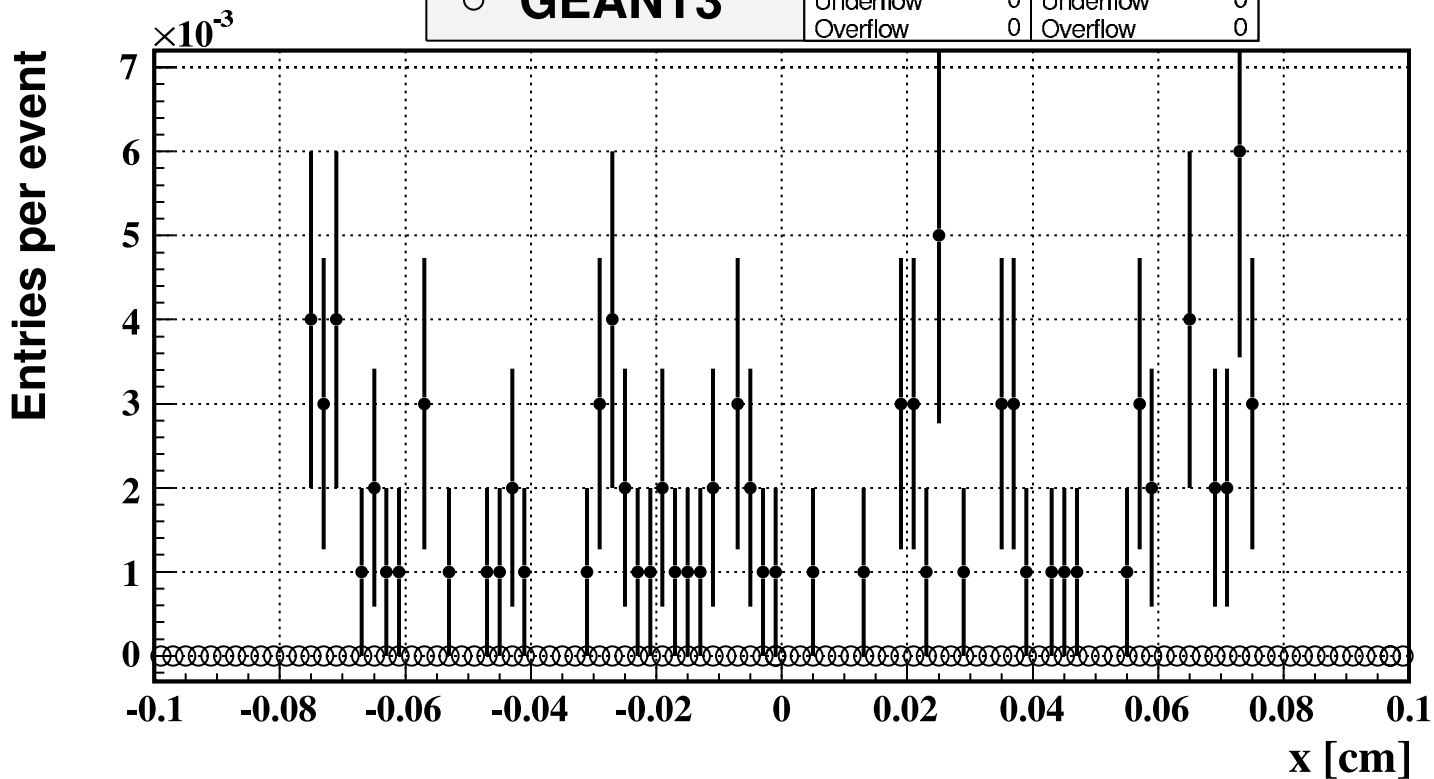


100 GeV Primary γ
Secondary π^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	99	Entries	0
Mean	0.0023	Mean	0
RMS	0.0491	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

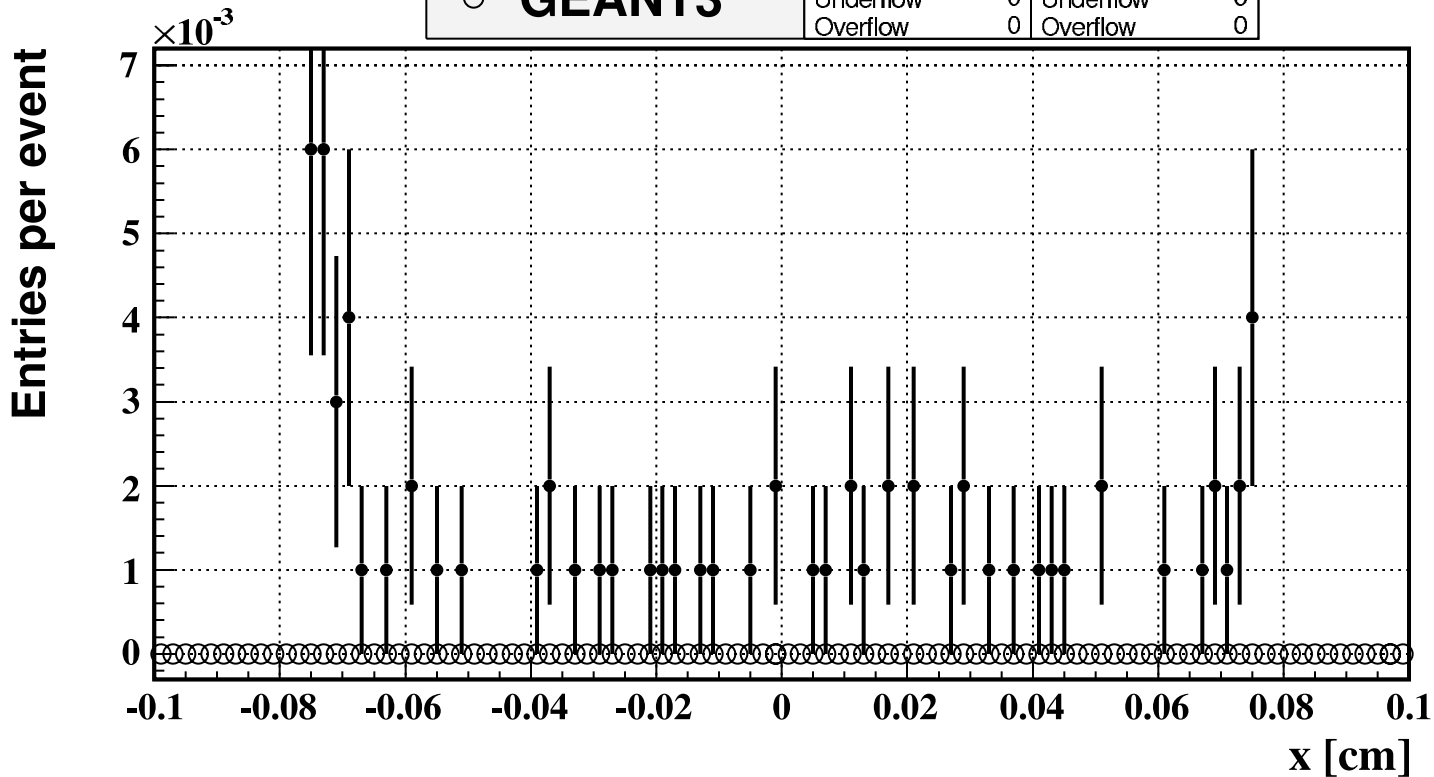


100 GeV Primary γ
Secondary π^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	69	Entries	0
Mean	-0.0105	Mean	0
RMS	0.0531	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

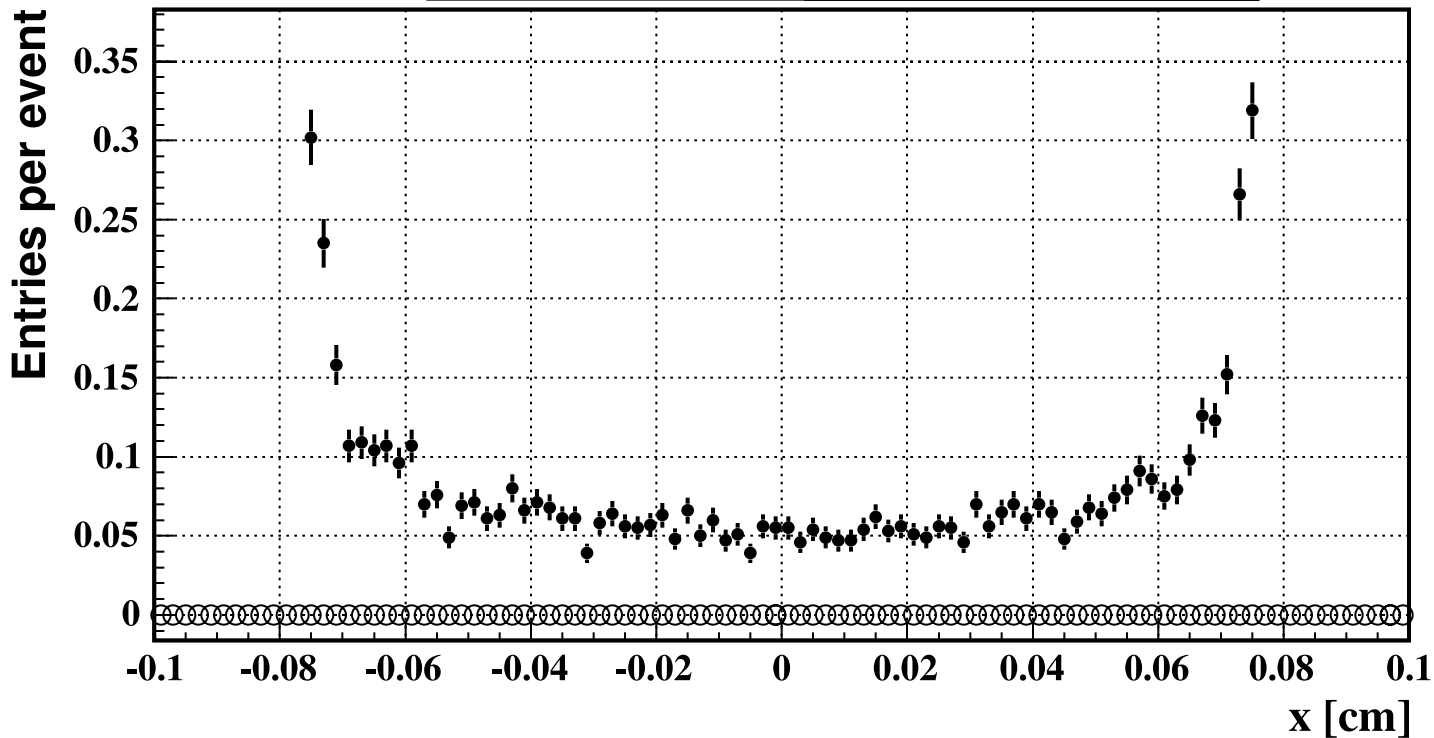


100 GeV Primary γ
Secondary n

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	6099	Entries	0
Mean	0.000219	Mean	0
RMS	0.0528	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

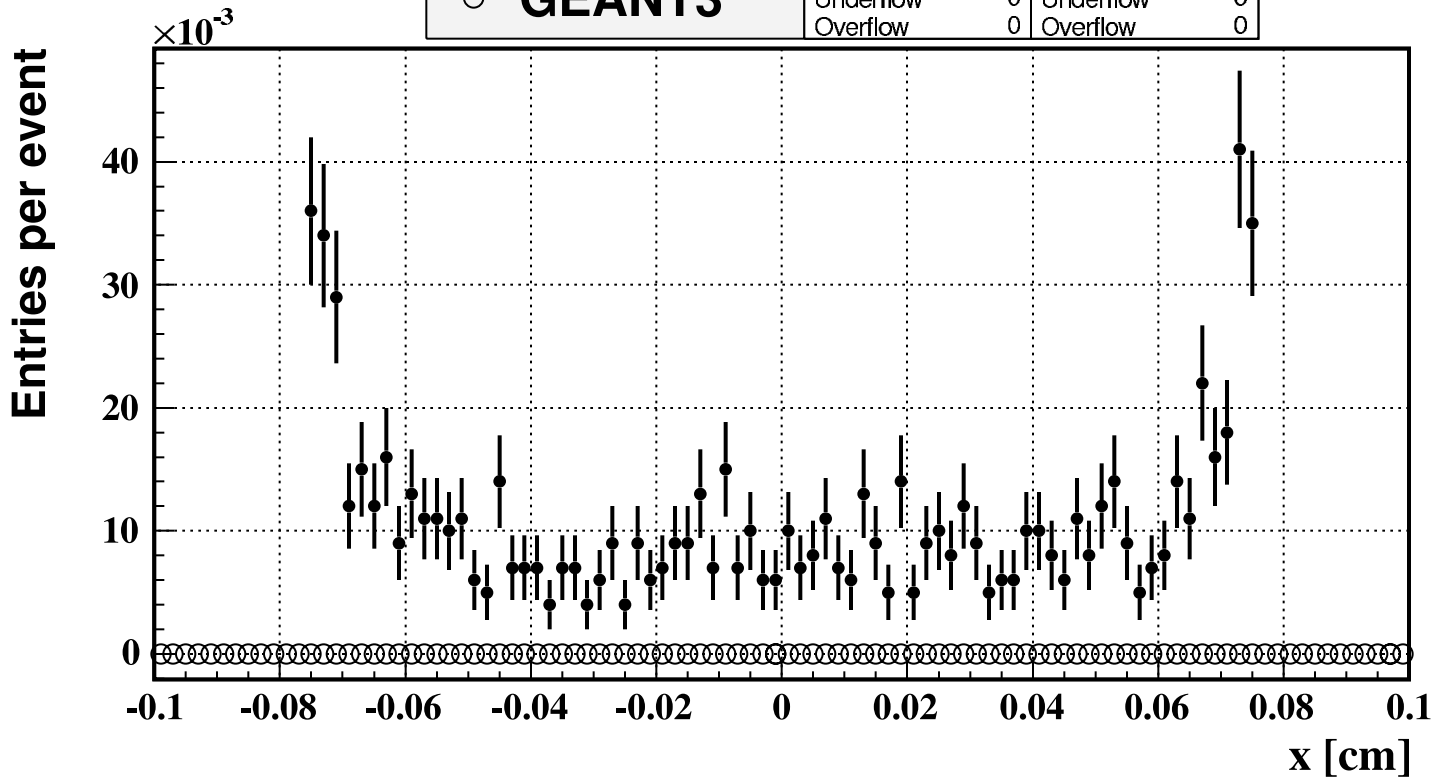


100 GeV Primary γ
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	835	Entries	0
Mean	0.0004	Mean	0
RMS	0.0518	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

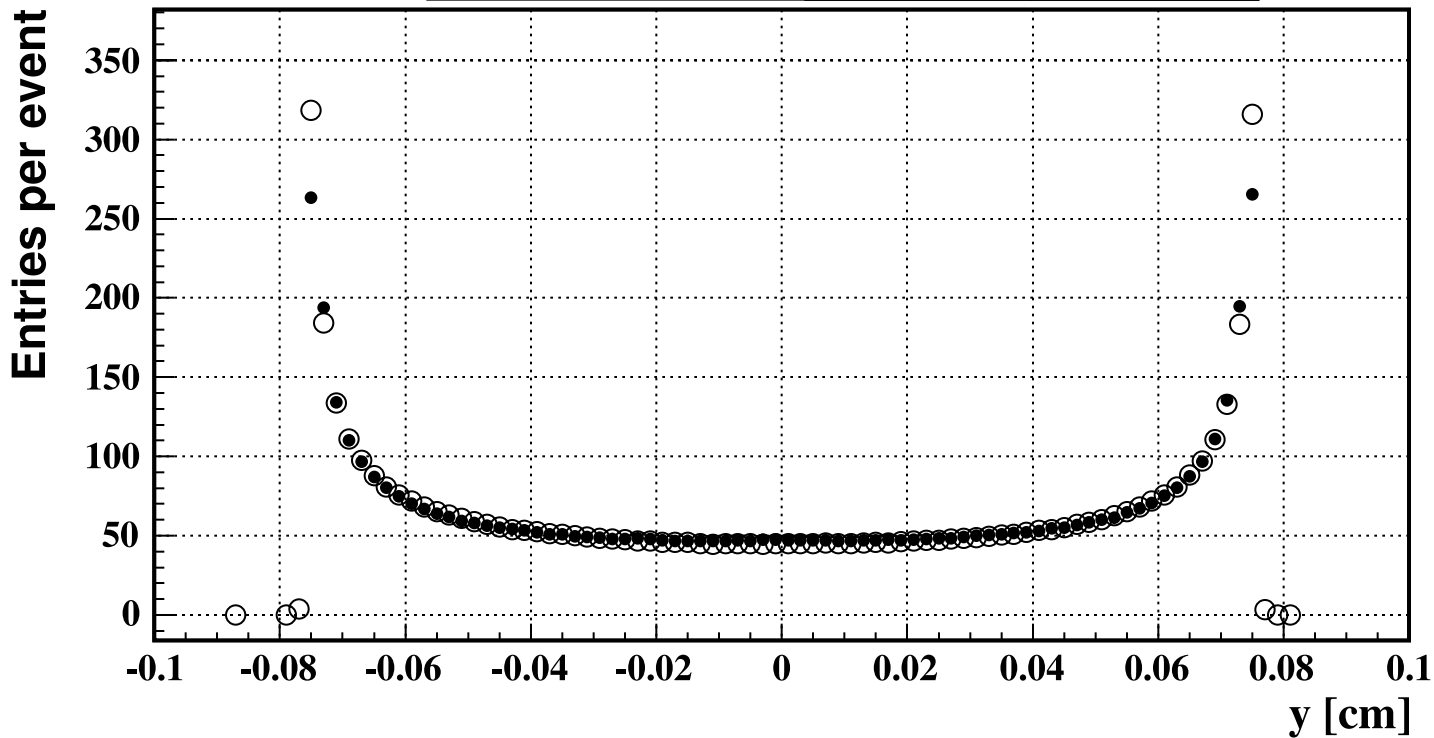


100 GeV Primary γ
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	5214884	Entries	5274786
Mean	0.000126	Mean	-9.3e-05
RMS	0.0525	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0

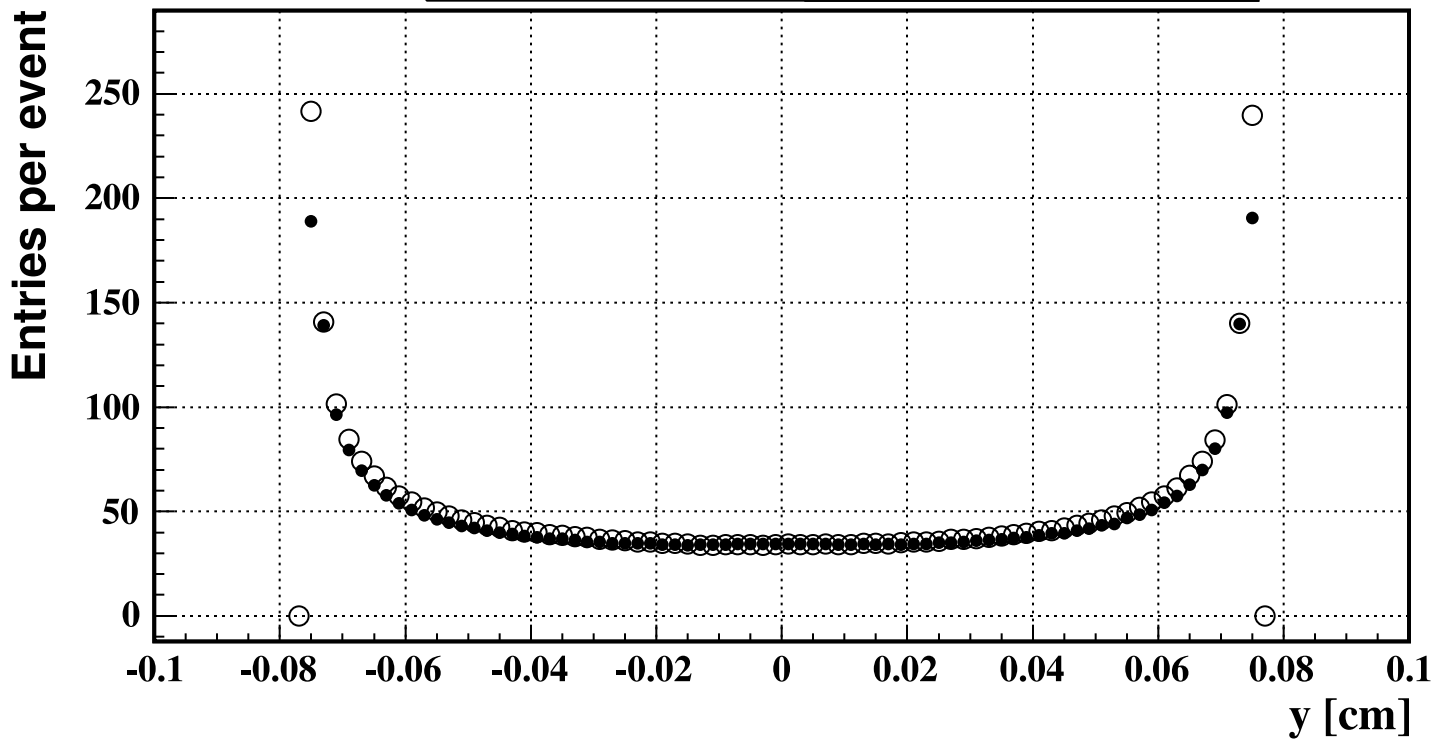


100 GeV Primary γ
Secondary γ

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	3766386	4005133
Mean	0.00011	-8e-05
RMS	0.0525	0.0533
Underflow	0	0
Overflow	0	0



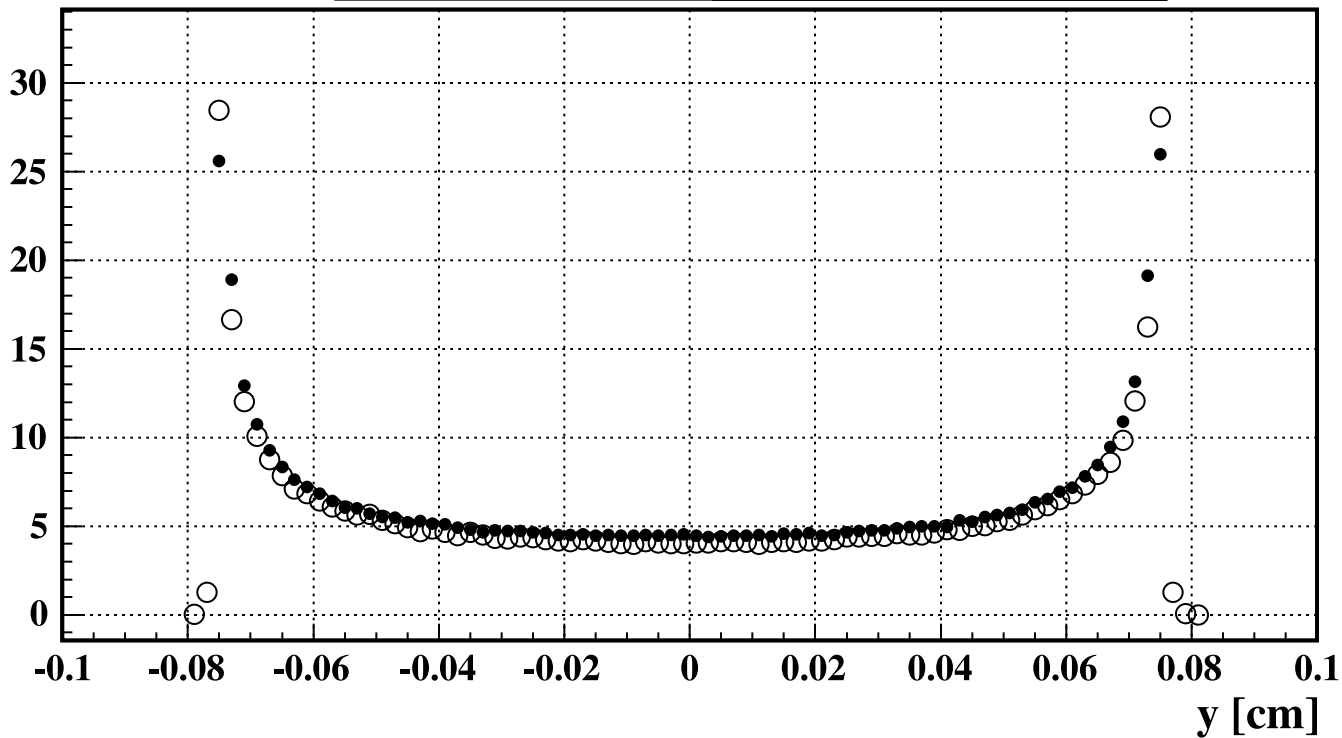
100 GeV Primary γ
Secondary e^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	503677	Entries	476162
Mean	0.000282	Mean	-0.000138
RMS	0.0527	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event



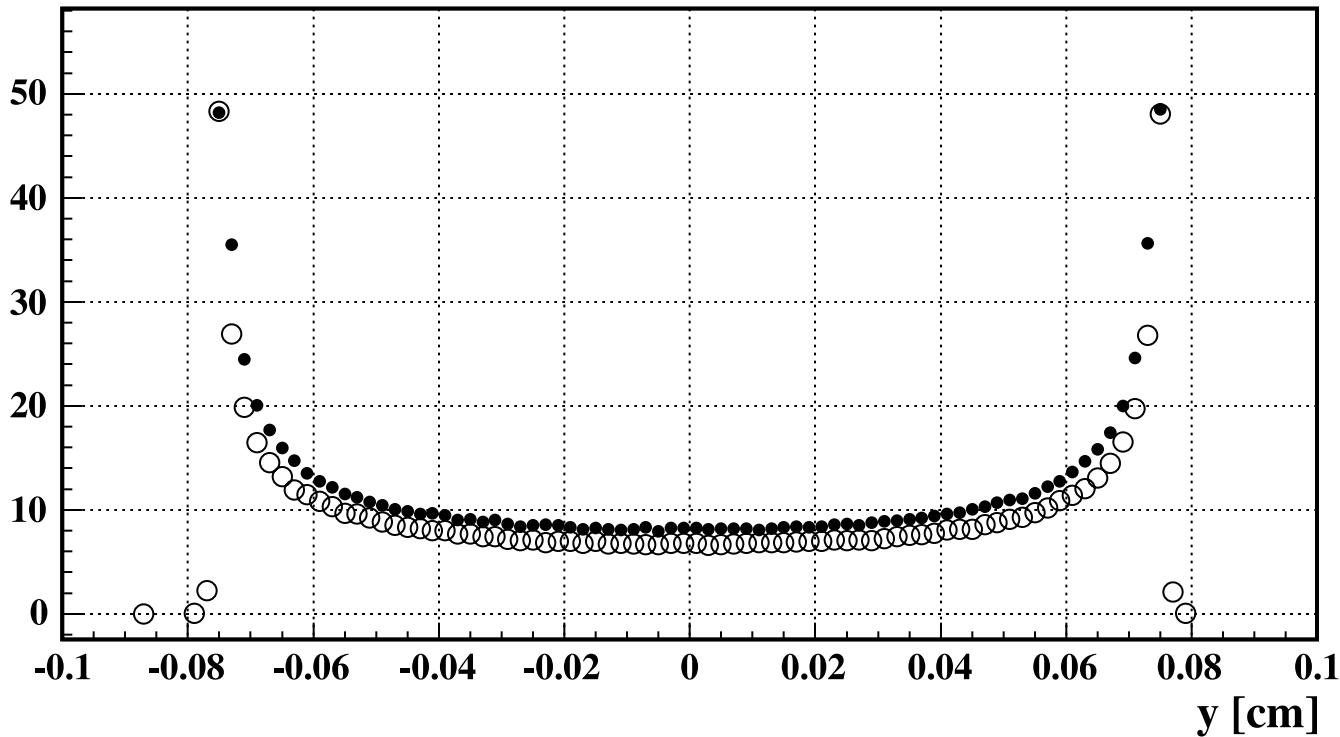
100 GeV Primary γ
Secondary e^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	937687	Entries	793491
Mean	0.000101	Mean	-0.000132
RMS	0.0528	RMS	0.0534
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event

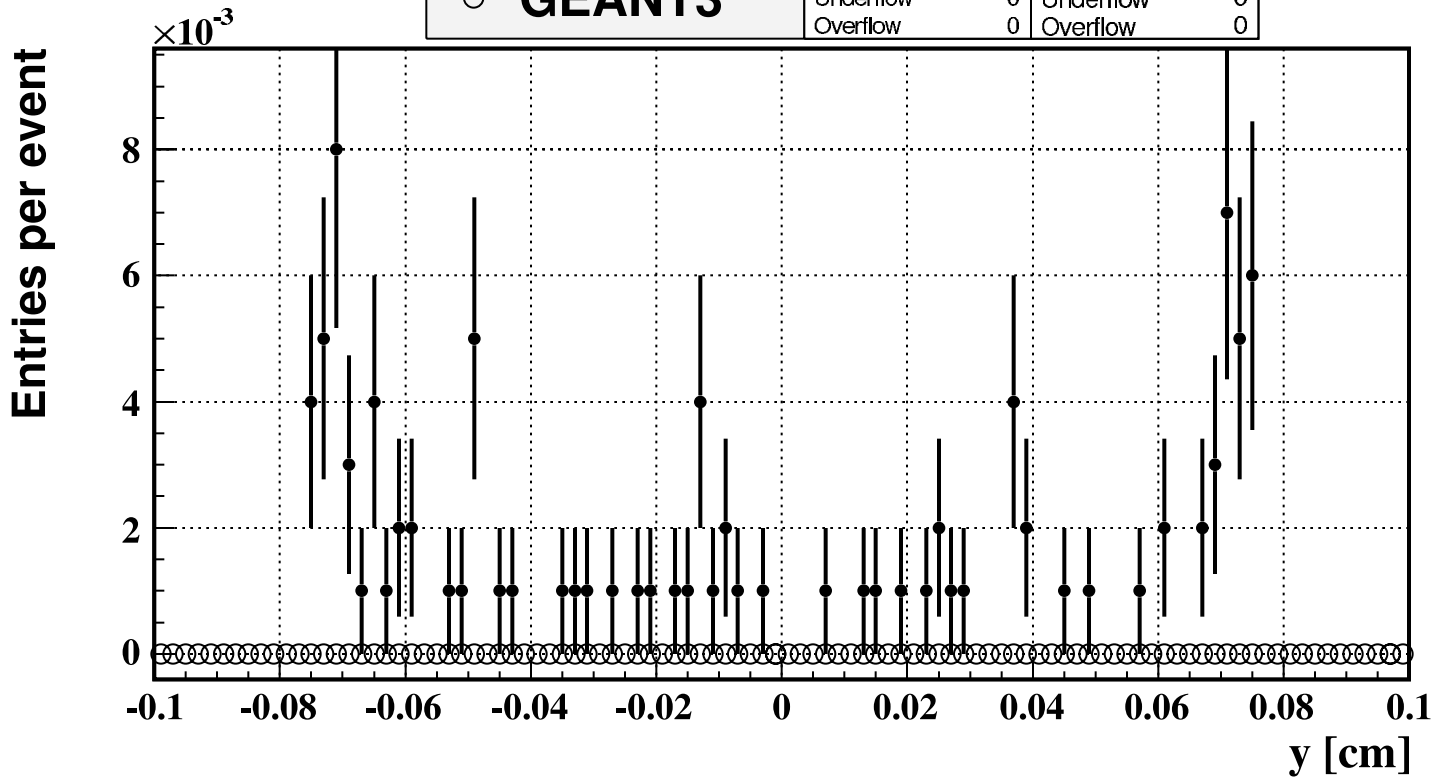


100 GeV Primary γ
Secondary π^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	99	Entries	0
Mean	-0.00477	Mean	0
RMS	0.0564	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

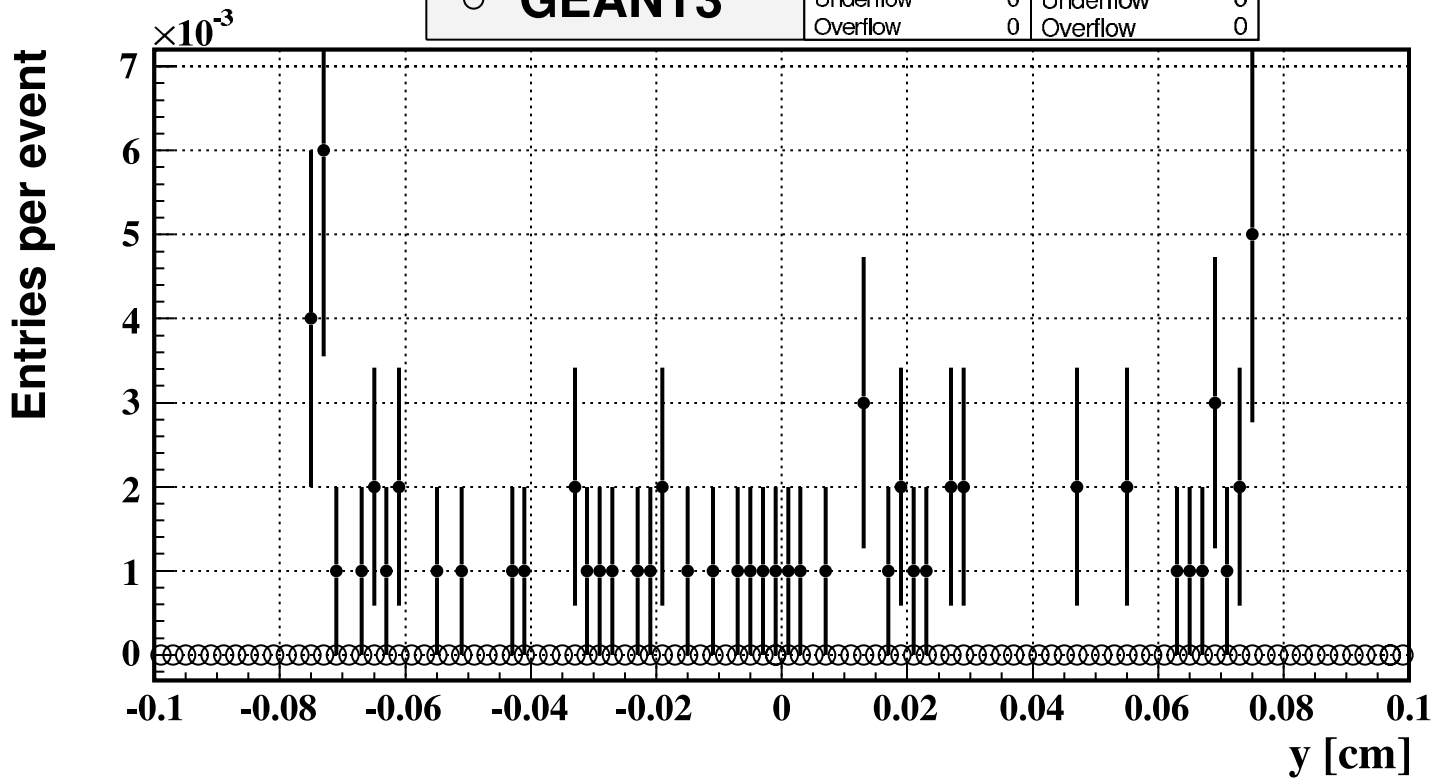


100 GeV Primary γ
Secondary π^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	69	Entries	0
Mean	-0.00291	Mean	0
RMS	0.0519	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

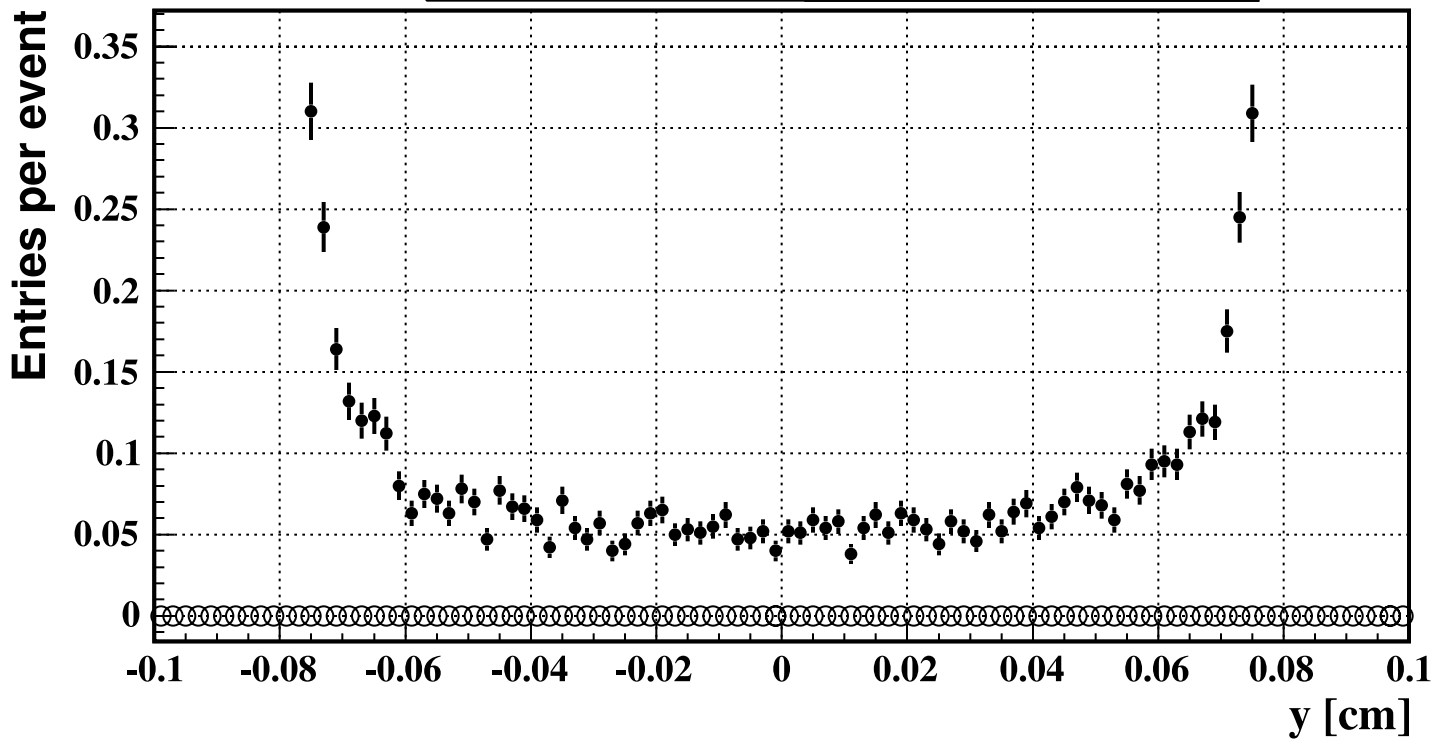


100 GeV Primary γ
Secondary n

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	6099	Entries	0
Mean	0.000413	Mean	0
RMS	0.0532	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

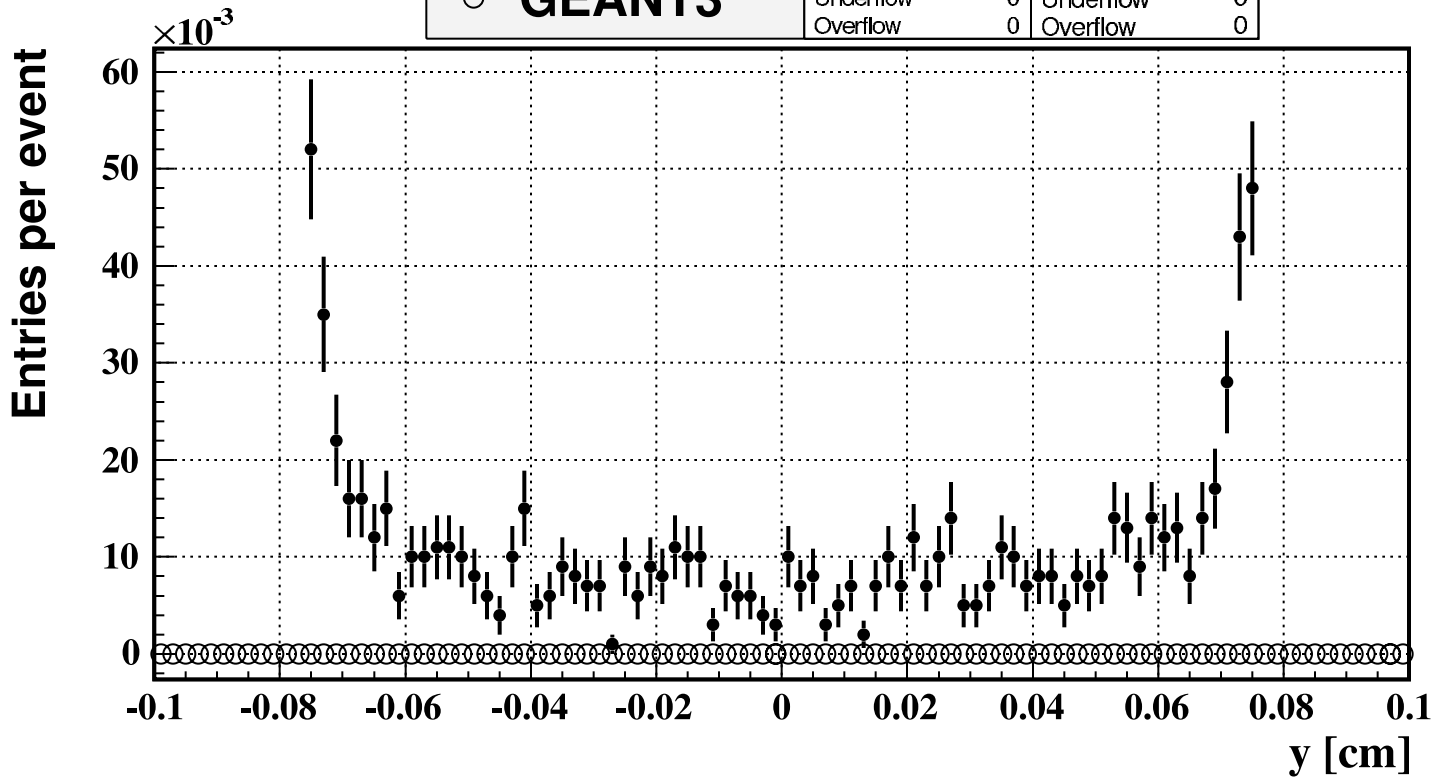


100 GeV Primary γ
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	835	Entries	0
Mean	0.00137	Mean	0
RMS	0.054	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

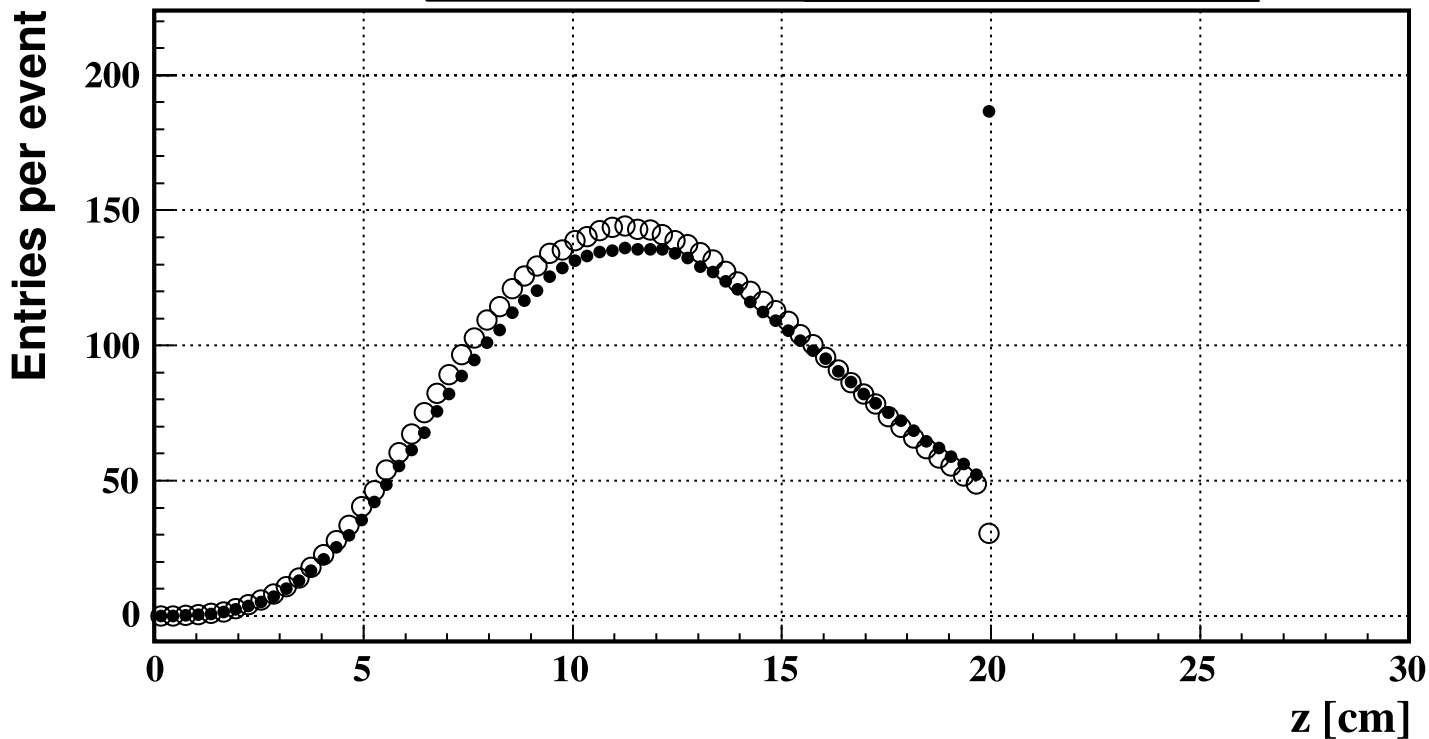


100 GeV Primary γ
Secondary

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	5214884	Entries	5274786
Mean	12.3	Mean	11.9
RMS	4.11	RMS	3.93
Underflow	0.001	Underflow	0
Overflow	0	Overflow	0

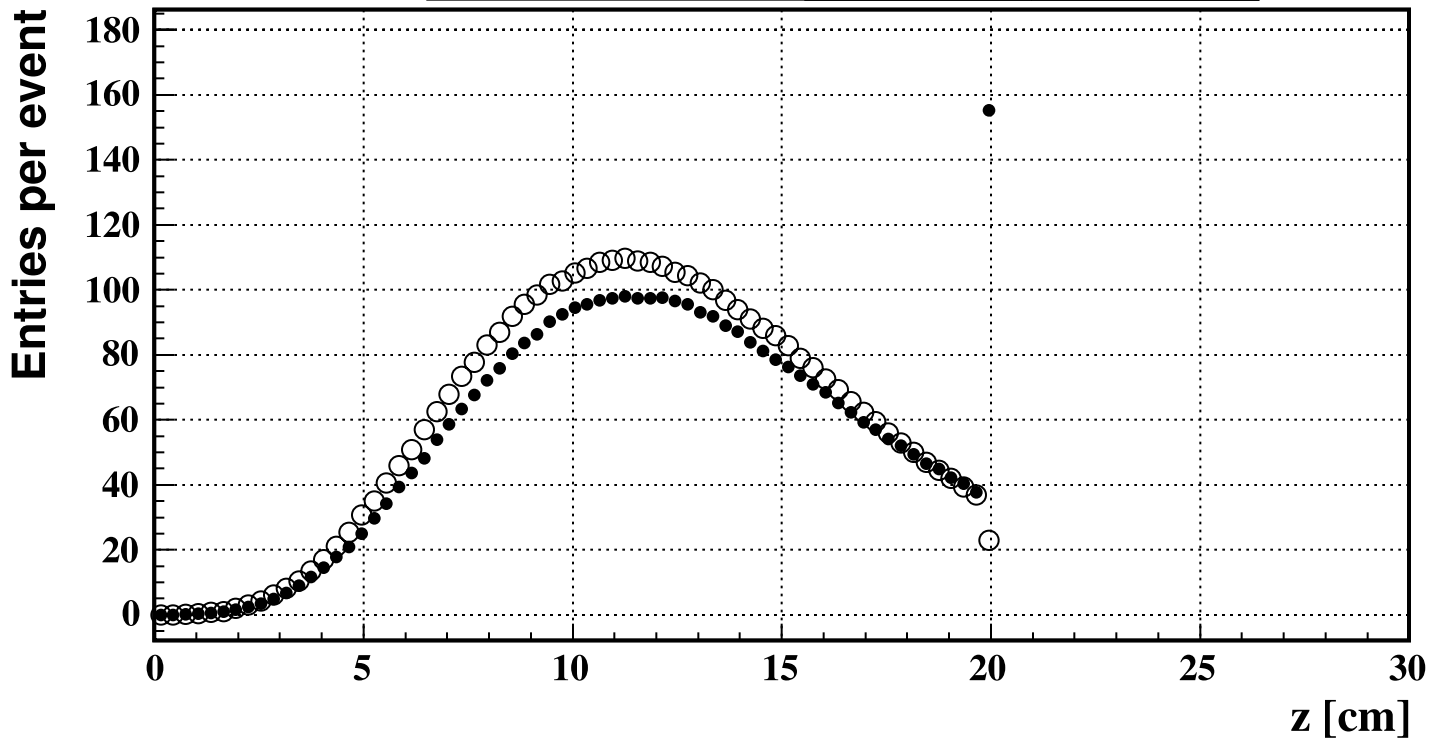


100 GeV Primary γ
Secondary γ

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	3766386	Entries	4005133
Mean	12.4	Mean	11.9
RMS	4.13	RMS	3.92
Underflow	0.001	Underflow	0
Overflow	0	Overflow	0



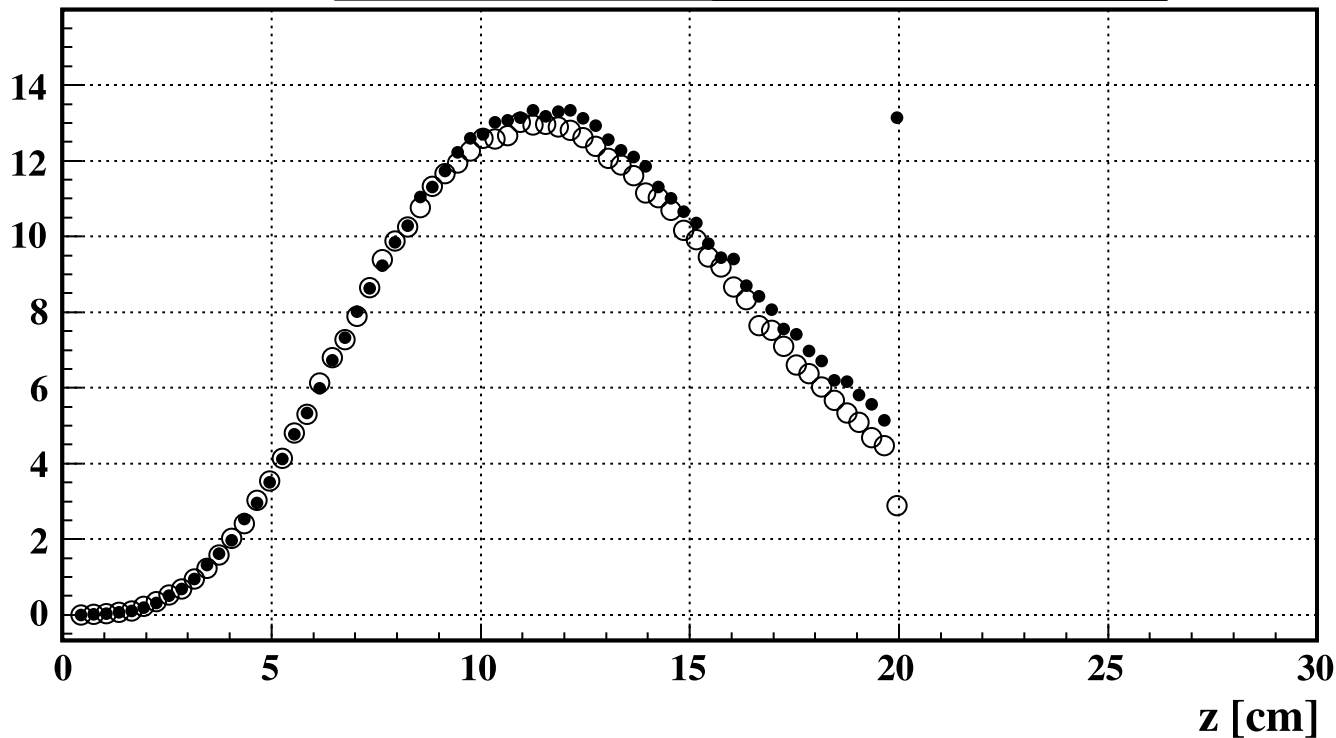
100 GeV Primary γ
Secondary e^+

● GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	503677	476162
Mean	12.2	11.9
RMS	4.06	3.92
Underflow	0	0
Overflow	0	0

Entries per event



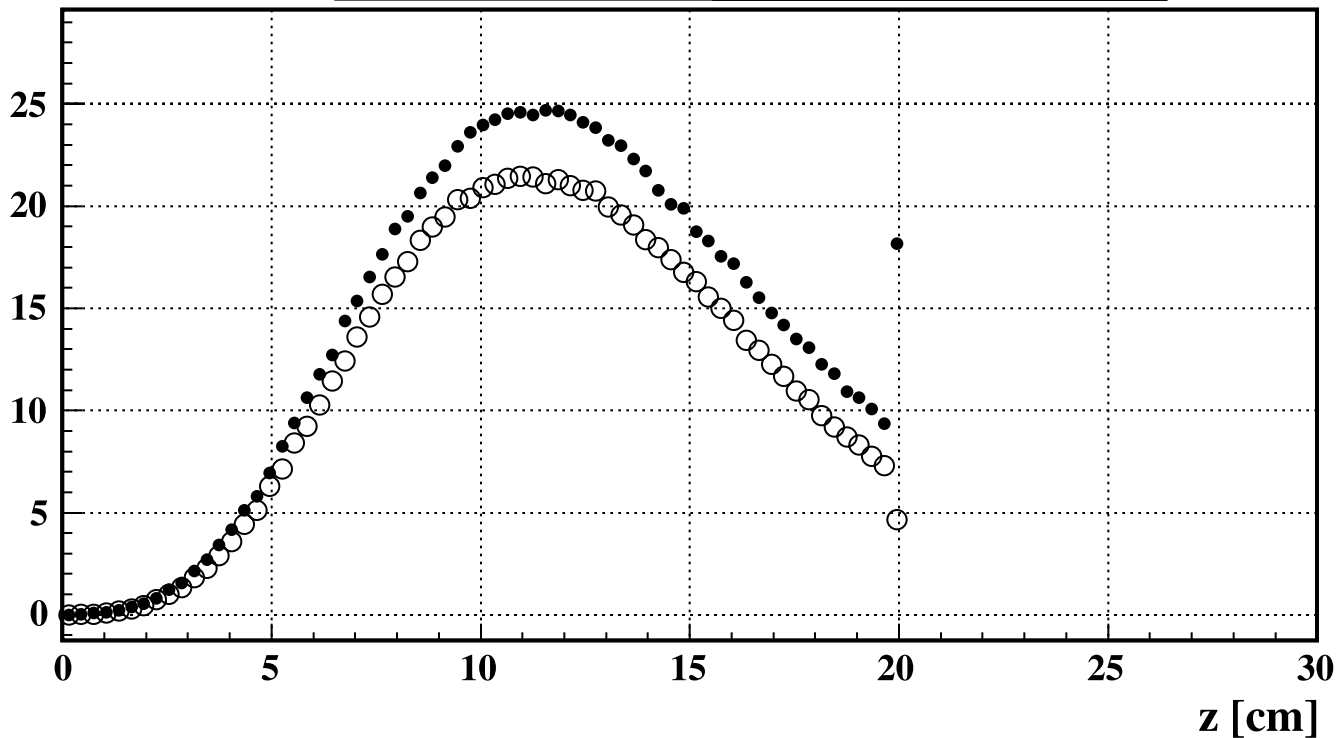
100 GeV Primary γ
Secondary e^-

● GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	937687	793491
Mean	12.1	11.9
RMS	4.06	3.95
Underflow	0	0
Overflow	0	0

Entries per event

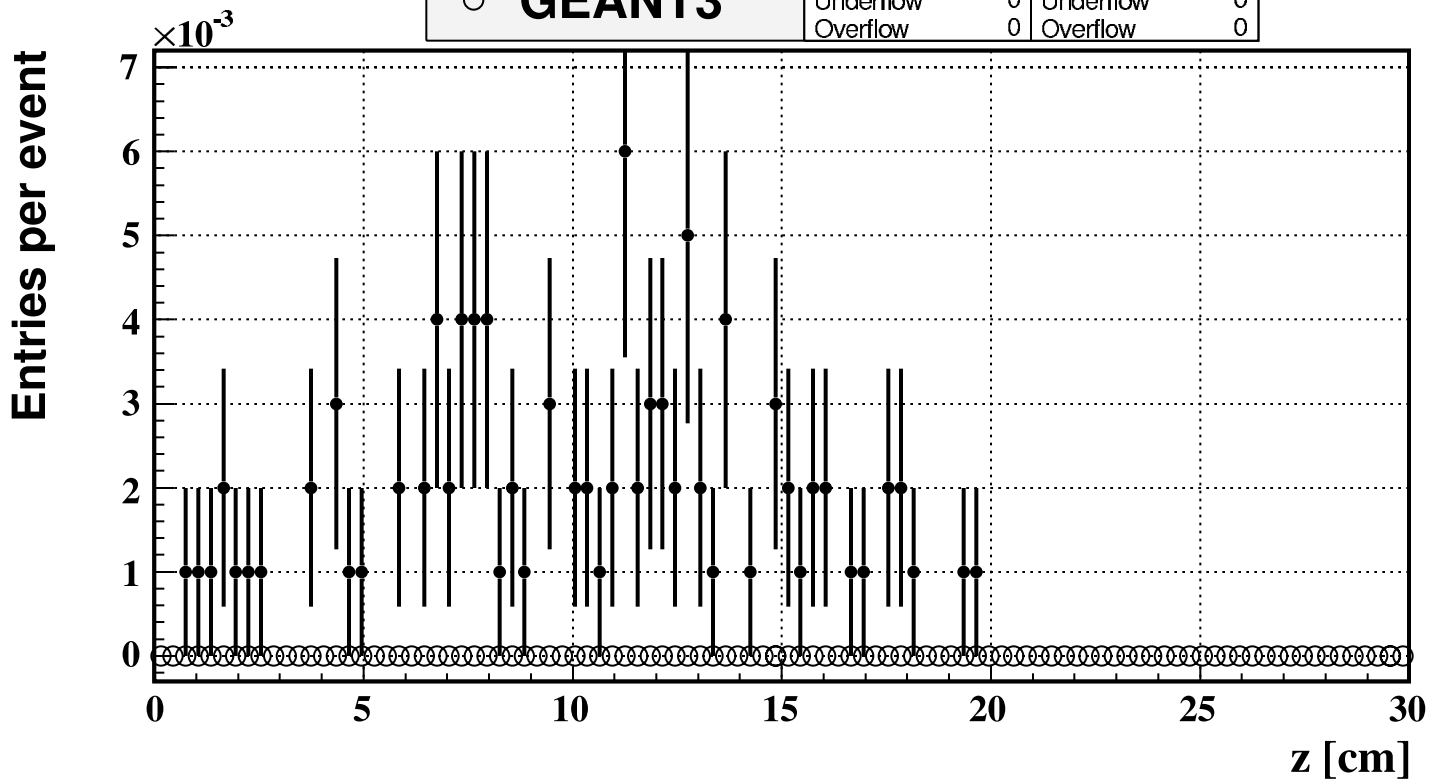


100 GeV Primary γ
Secondary π^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	99	Entries	0
Mean	10.2	Mean	0
RMS	4.53	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

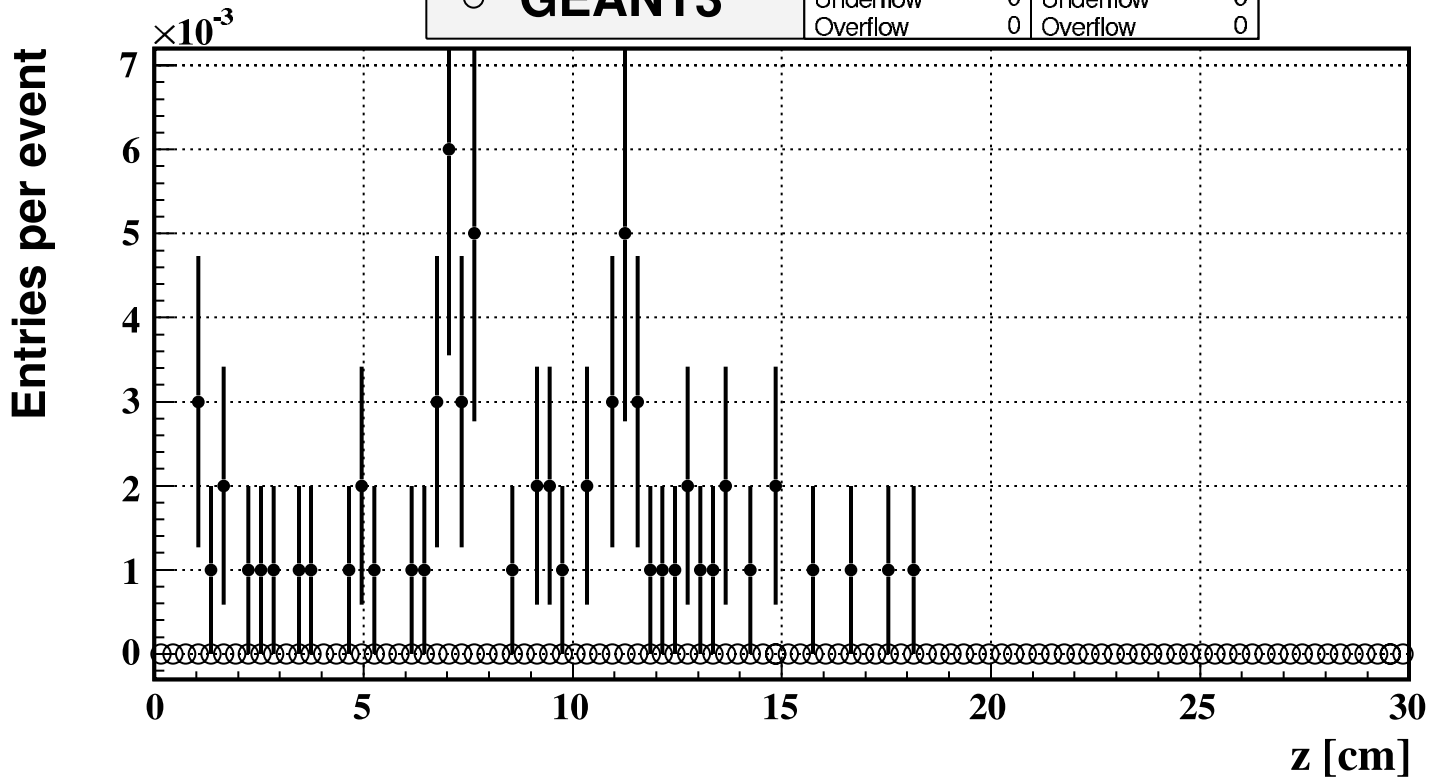


100 GeV Primary γ
Secondary π^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	69	Entries	0
Mean	8.79	Mean	0
RMS	4.21	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

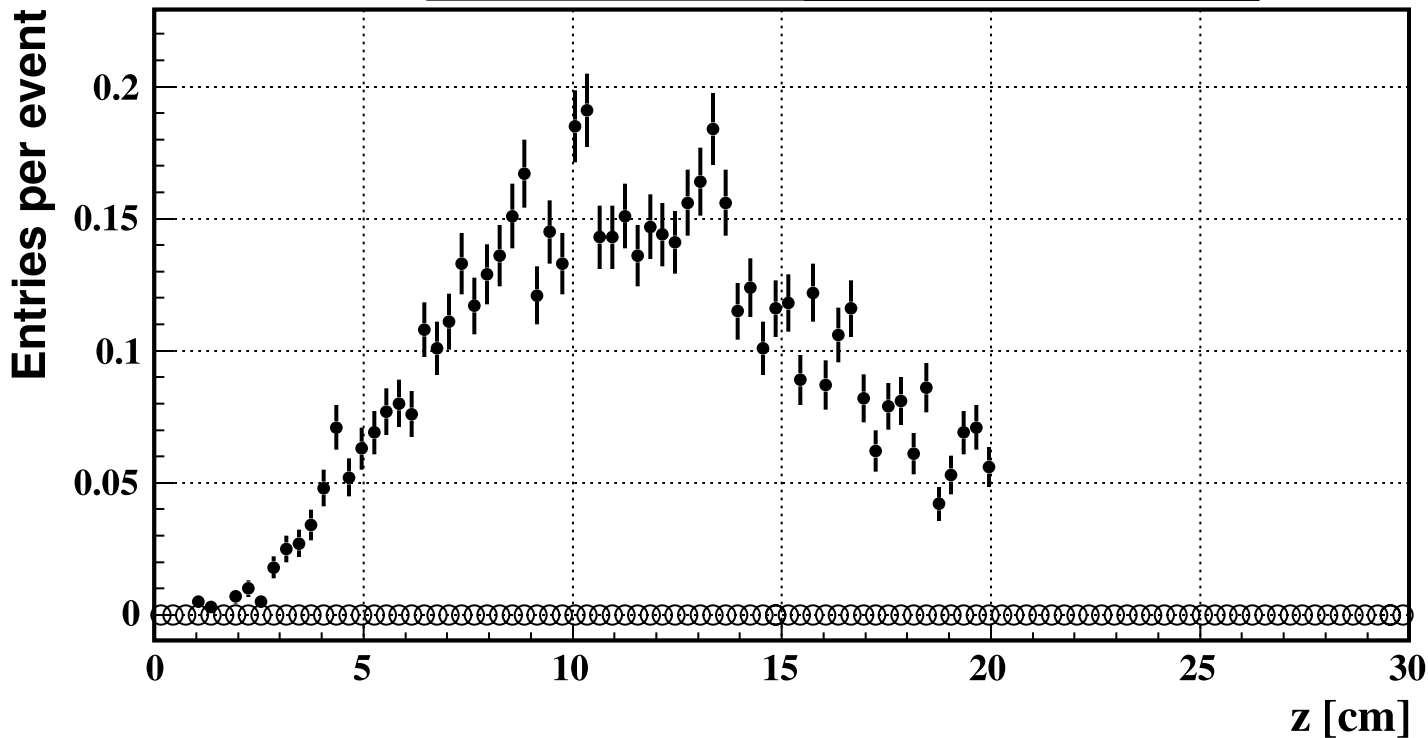


100 GeV Primary γ
Secondary n

• **GEANT4**

○ **GEANT3**

GEANT4		GEANT3	
Entries	6099	Entries	0
Mean	11.5	Mean	0
RMS	4.14	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

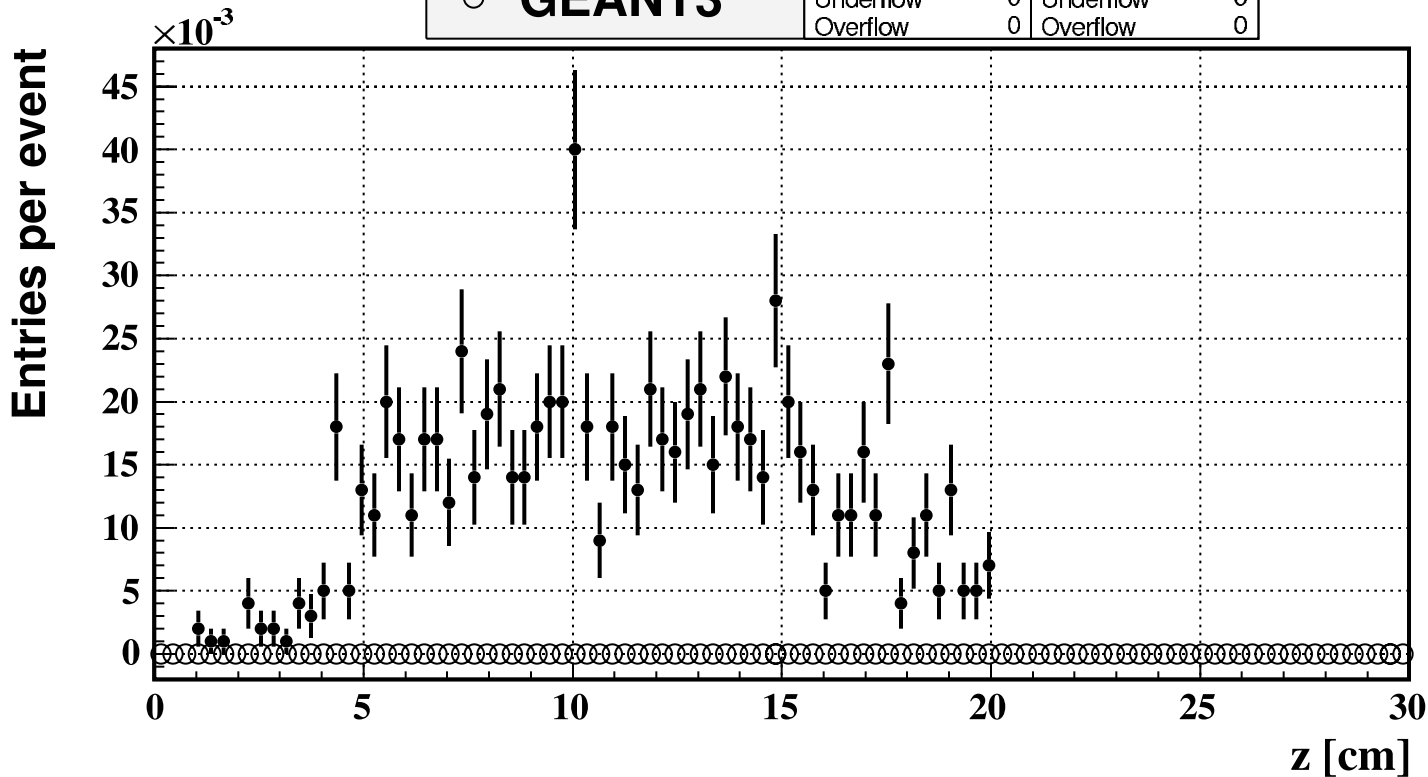


100 GeV Primary γ
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	835	Entries	0
Mean	11.3	Mean	0
RMS	4.3	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

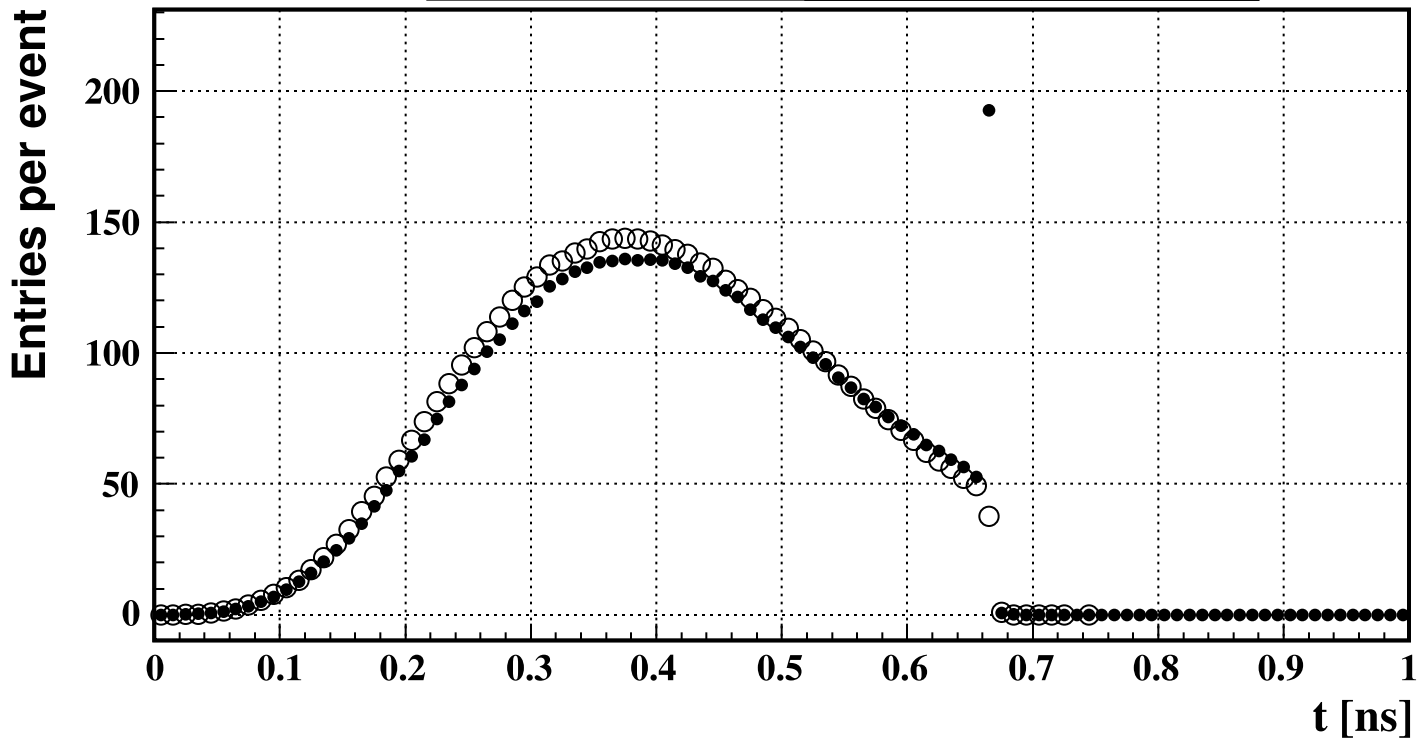


100 GeV Primary γ
Secondary

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	5214884	Entries	5274786
Mean	0.411	Mean	0.398
RMS	0.137	RMS	0.131
Underflow	0	Underflow	0
Overflow	0.081	Overflow	0



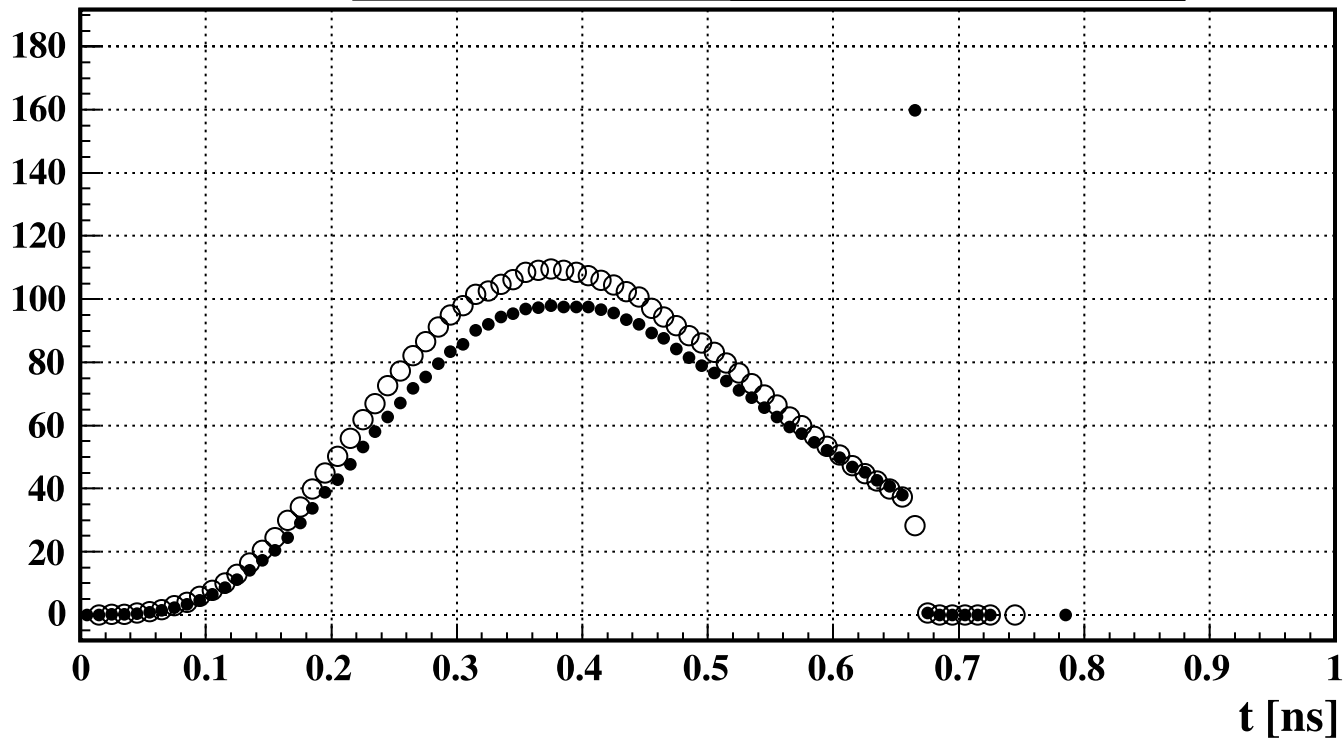
100 GeV Primary γ
Secondary γ

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	3766386	Entries	4005133
Mean	0.413	Mean	0.398
RMS	0.138	RMS	0.131
Underflow	0	Underflow	0
Overflow	0.005	Overflow	0

Entries per event

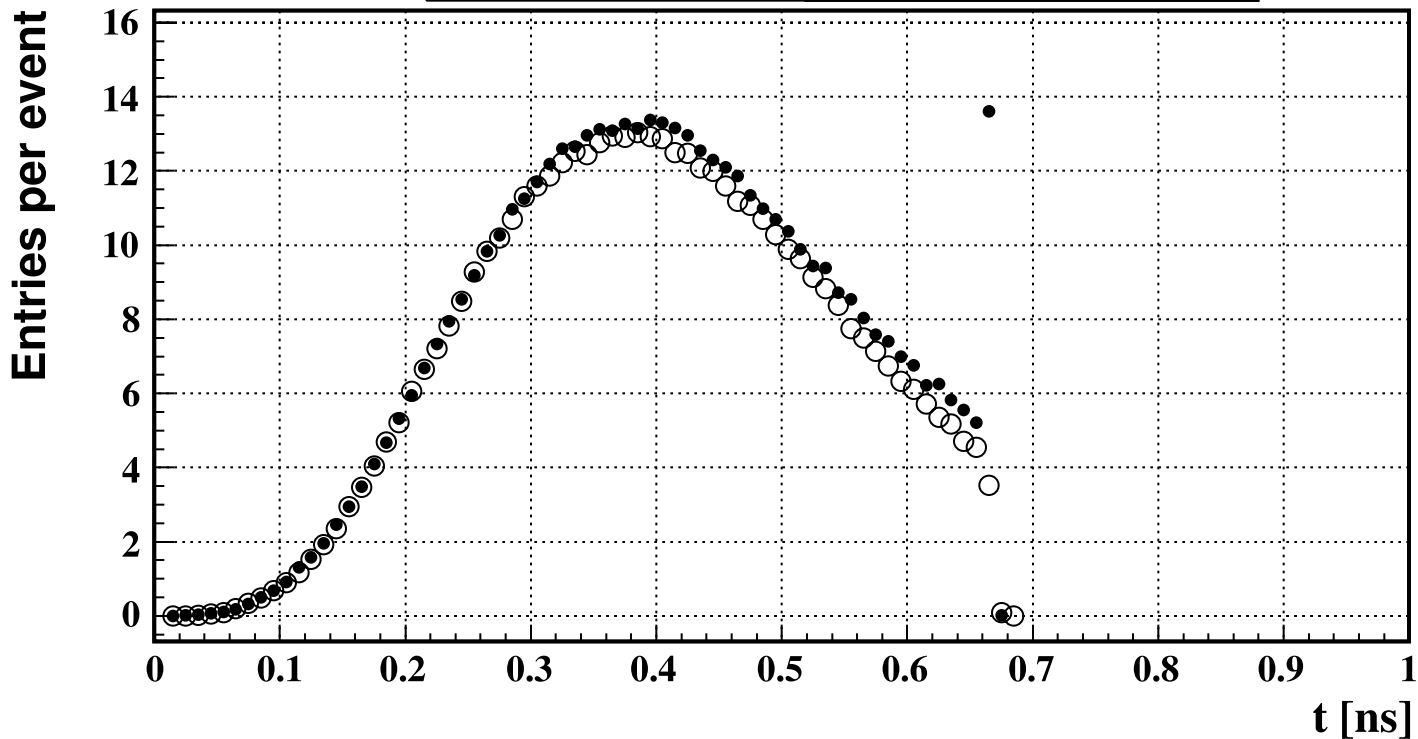


100 GeV Primary γ
Secondary e^+

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	503677	Entries	476162
Mean	0.408	Mean	0.399
RMS	0.135	RMS	0.131
Underflow	0	Underflow	0
Overflow	0.008	Overflow	0



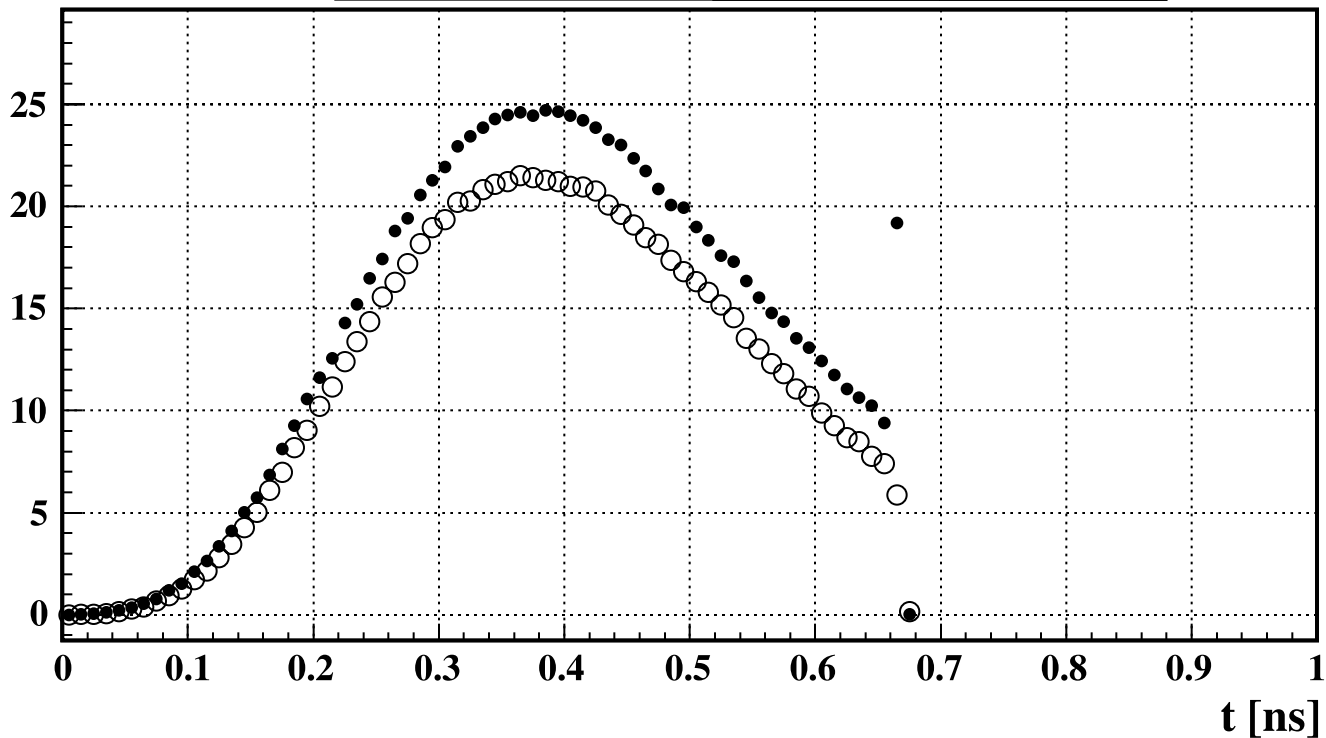
100 GeV Primary γ
Secondary e^-

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	937687	793491
Mean	0.403	0.397
RMS	0.136	0.132
Underflow	0	0
Overflow	0	0

Entries per event

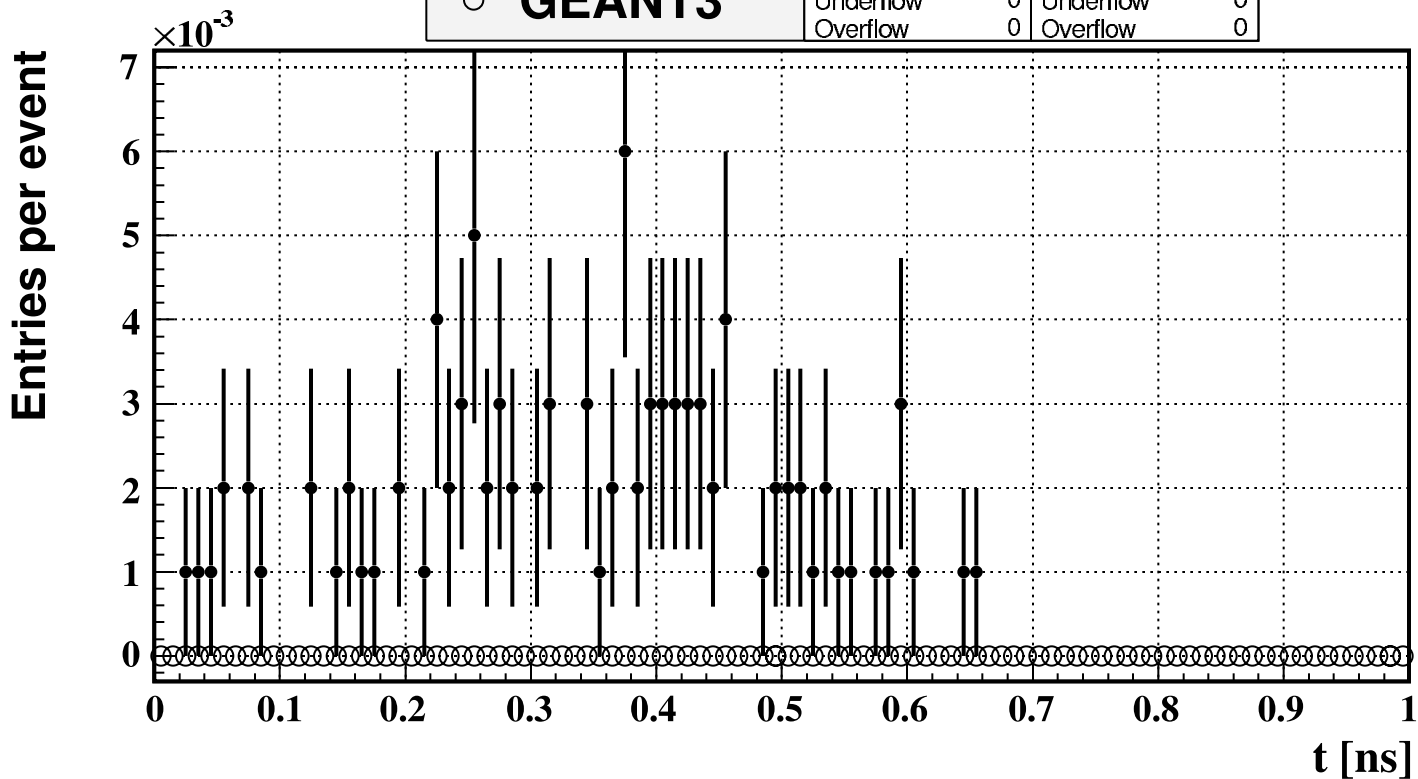


100 GeV Primary γ
Secondary π^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	99	Entries	0
Mean	0.344	Mean	0
RMS	0.151	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

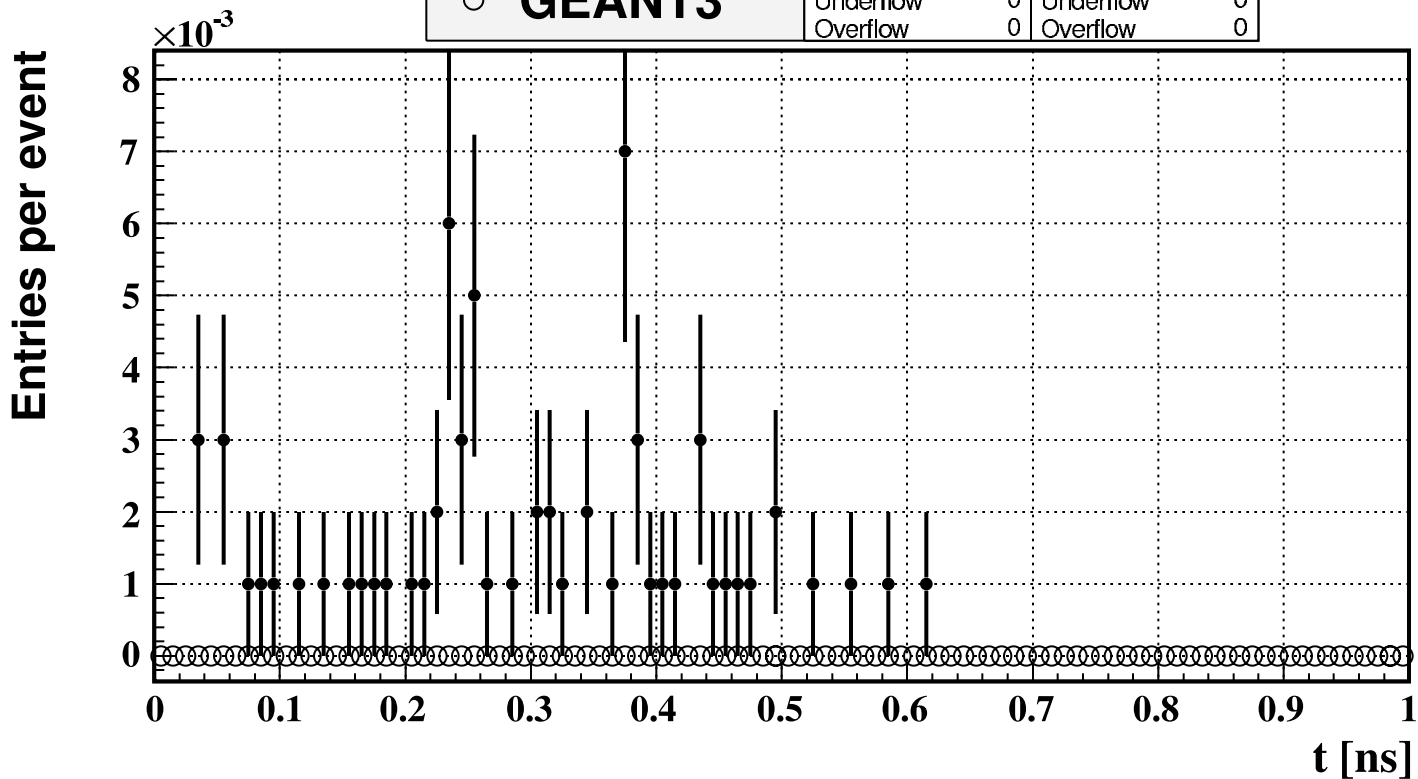


100 GeV Primary γ
Secondary π^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	69	Entries	0
Mean	0.295	Mean	0
RMS	0.141	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

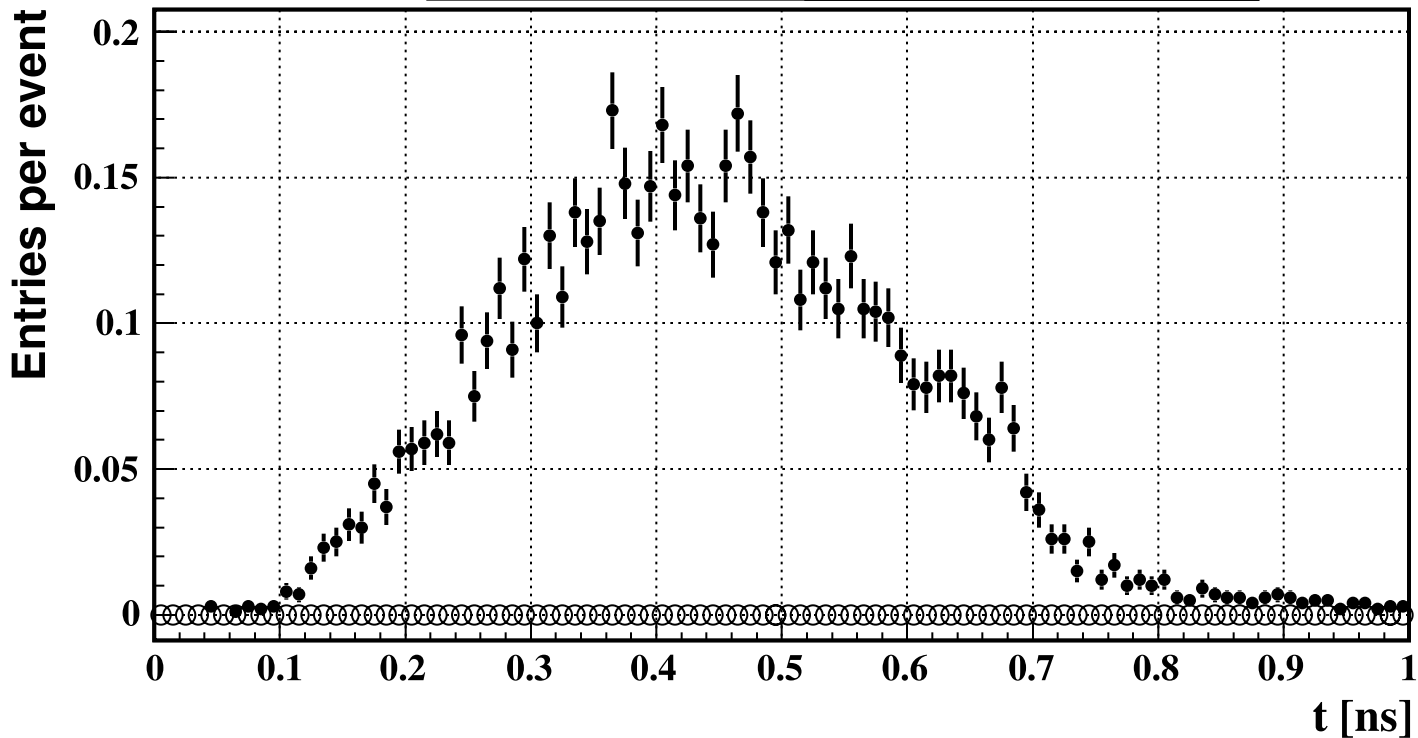


100 GeV Primary γ
Secondary n

● GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	6099	Entries	0
Mean	0.445	Mean	0
RMS	0.156	RMS	0
Underflow	0	Underflow	0
Overflow	0.067	Overflow	0

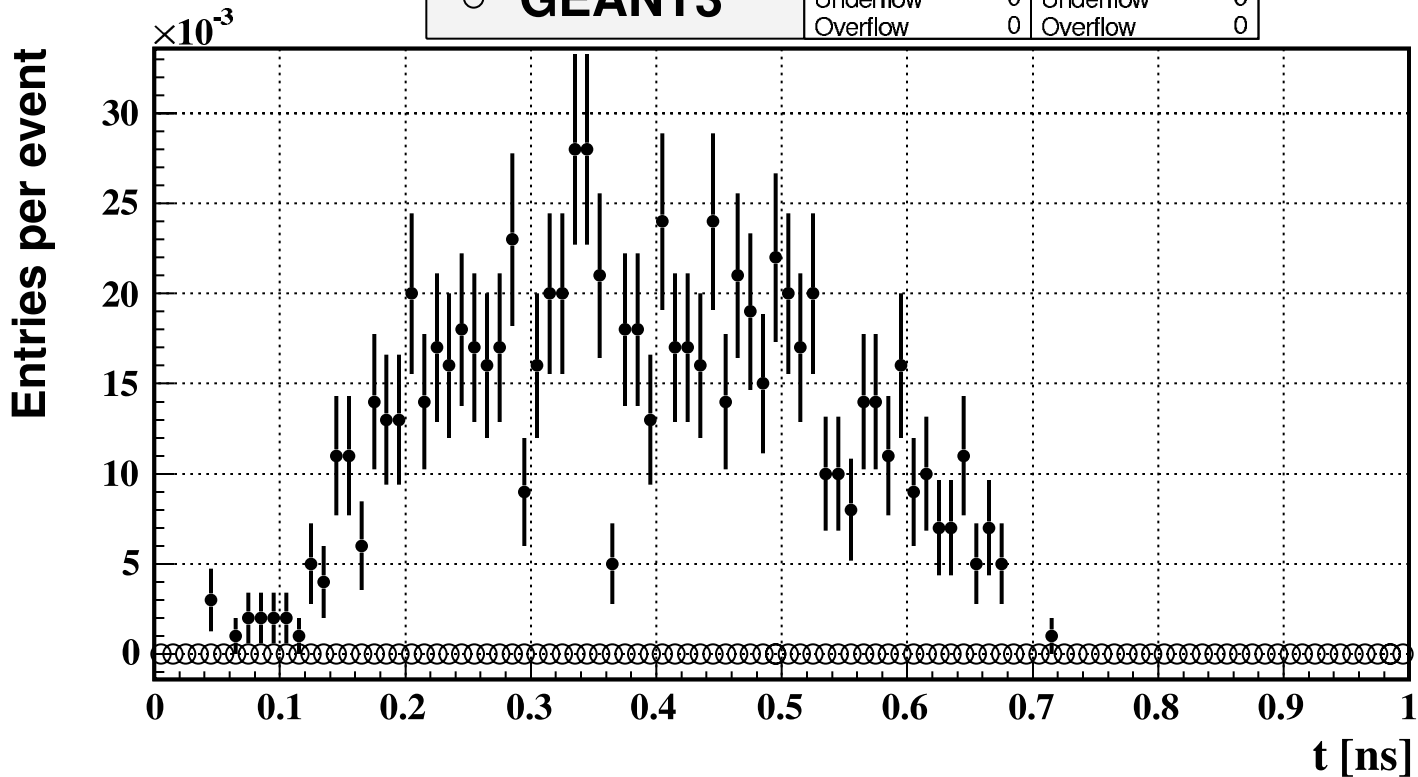


100 GeV Primary γ
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	835	Entries	0
Mean	0.385	Mean	0
RMS	0.144	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

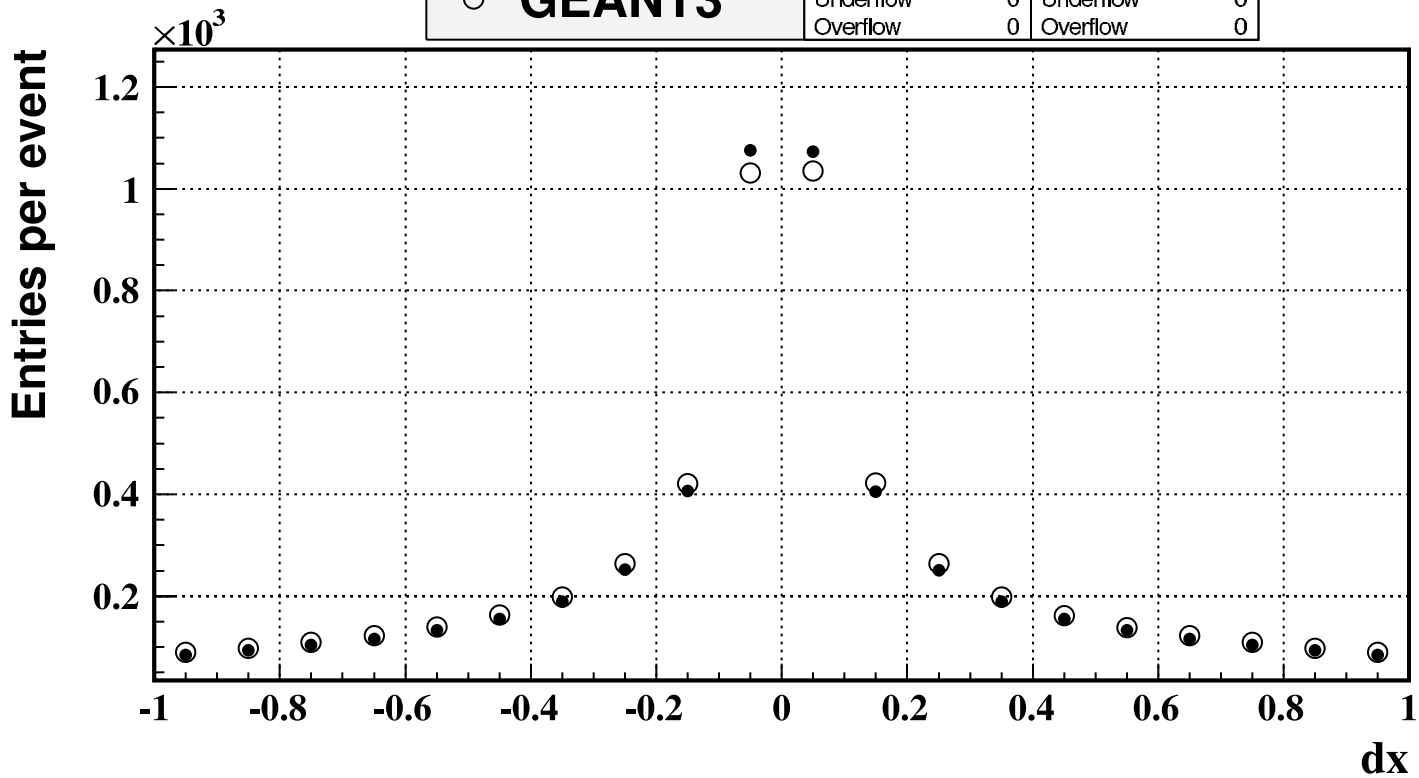


100 GeV Primary γ
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	5214884	Entries	5274786
Mean	-6.68e-05	Mean	-6.3e-05
RMS	0.378	RMS	0.385
Underflow	0	Underflow	0
Overflow	0	Overflow	0

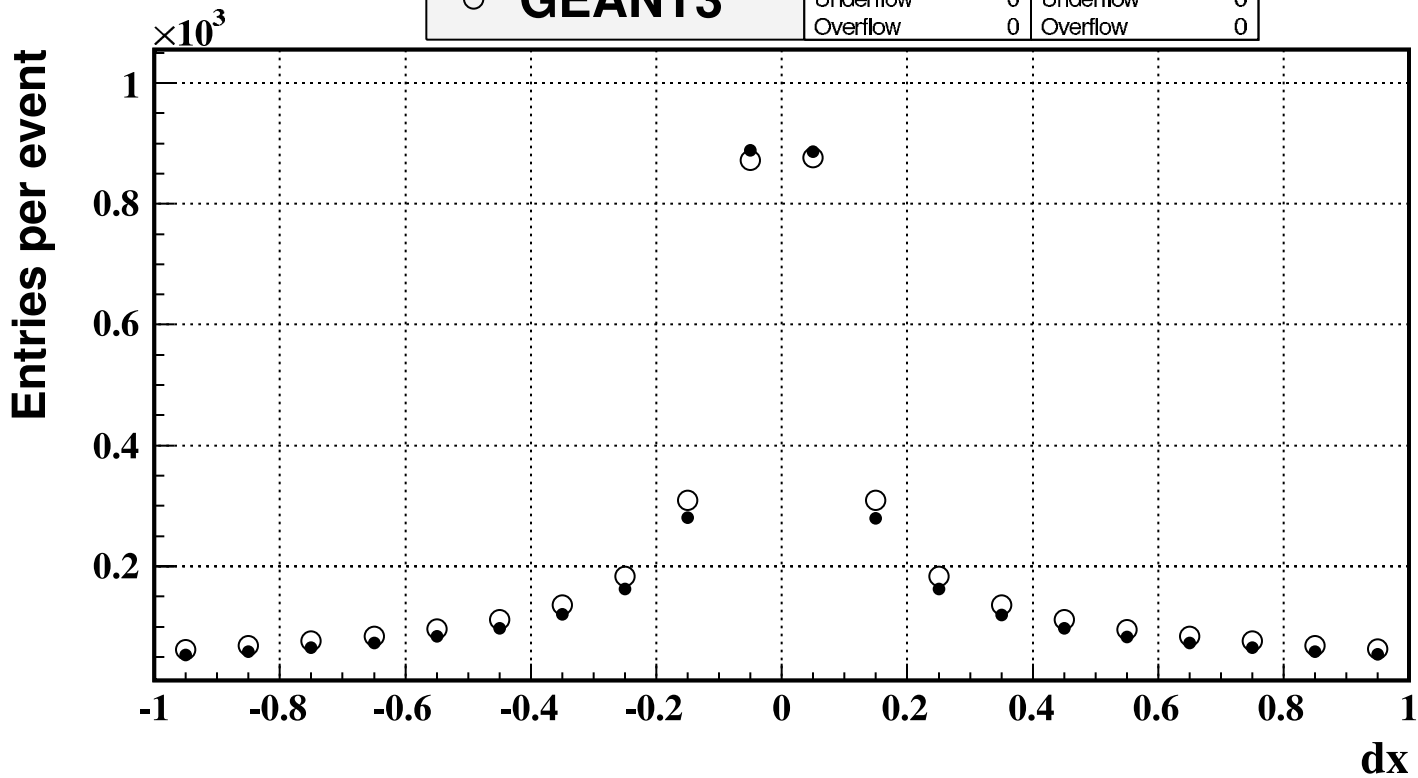


100 GeV Primary γ
Secondary γ

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	3766386	Entries	4005133
Mean	2.71e-05	Mean	3.07e-05
RMS	0.354	RMS	0.369
Underflow	0	Underflow	0
Overflow	0	Overflow	0



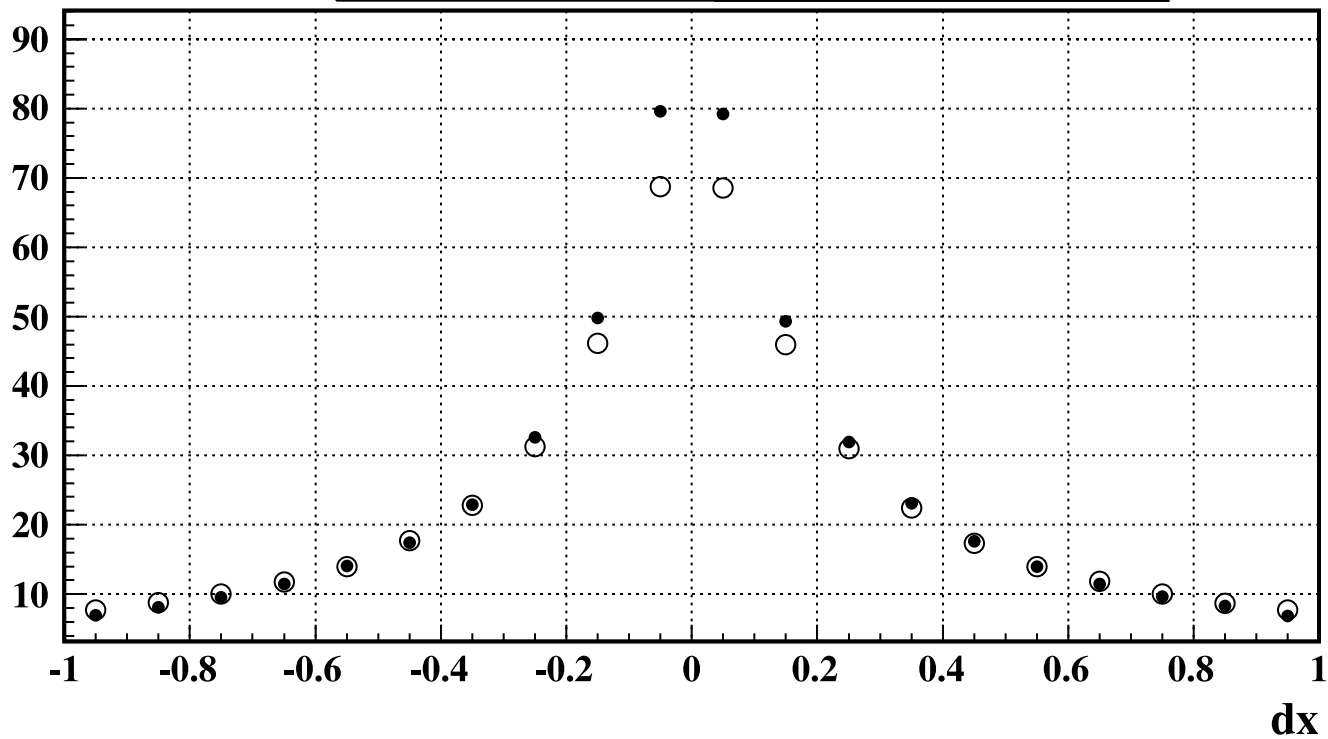
100 GeV Primary γ
Secondary e^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	503677	Entries	476162
Mean	0.000191	Mean	-0.000799
RMS	0.379	RMS	0.397
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event

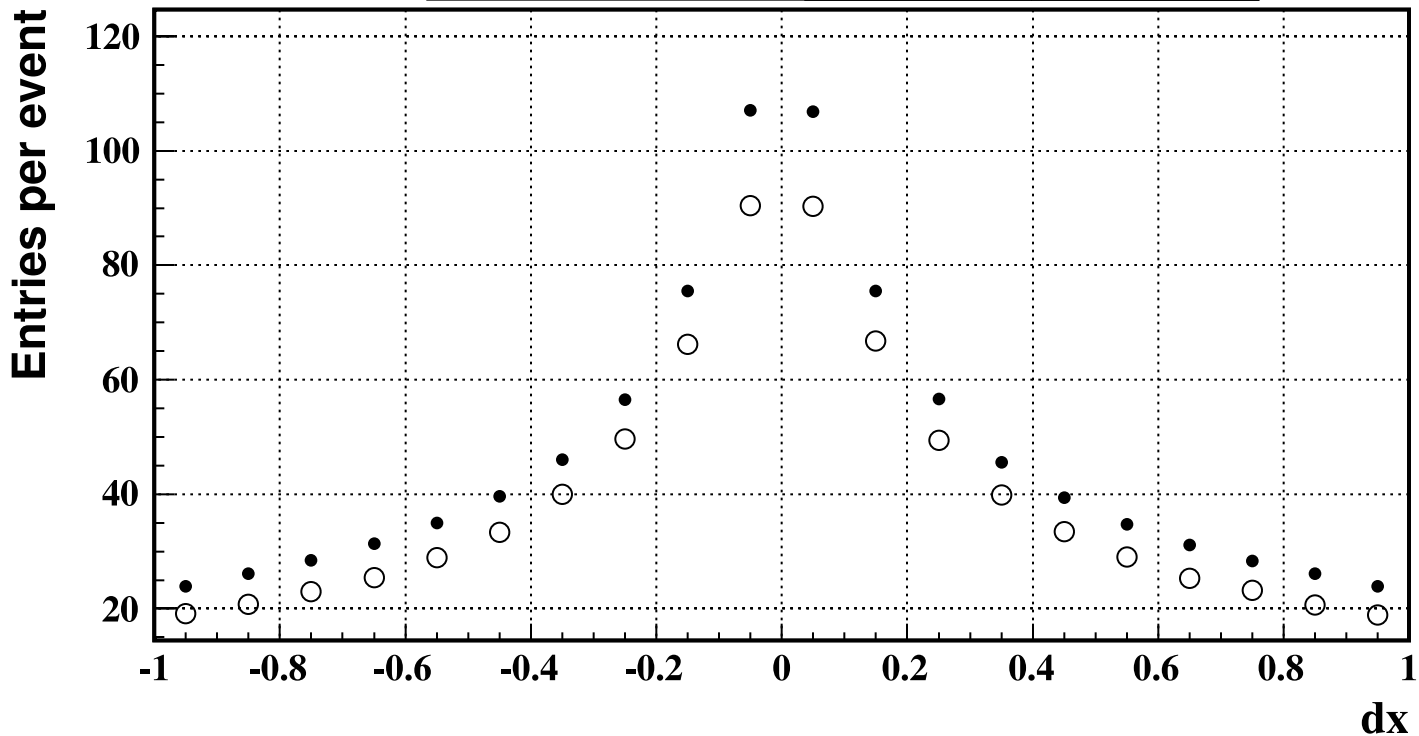


100 GeV Primary γ
Secondary e^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	937687	Entries	793491
Mean	-0.000598	Mean	-9.41e-05
RMS	0.46	RMS	0.452
Underflow	0	Underflow	0
Overflow	0	Overflow	0

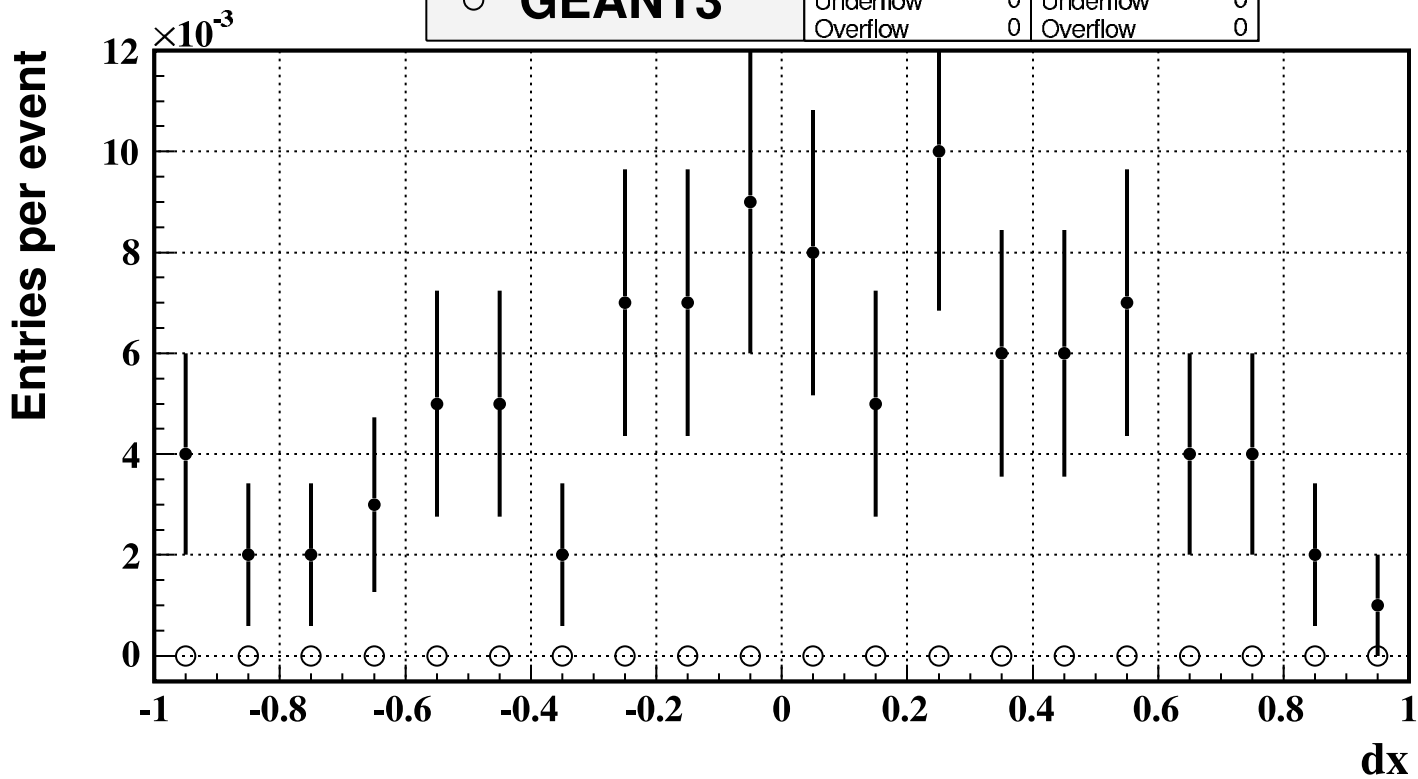


100 GeV Primary γ
Secondary π^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	99	Entries	0
Mean	0.0283	Mean	0
RMS	0.467	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

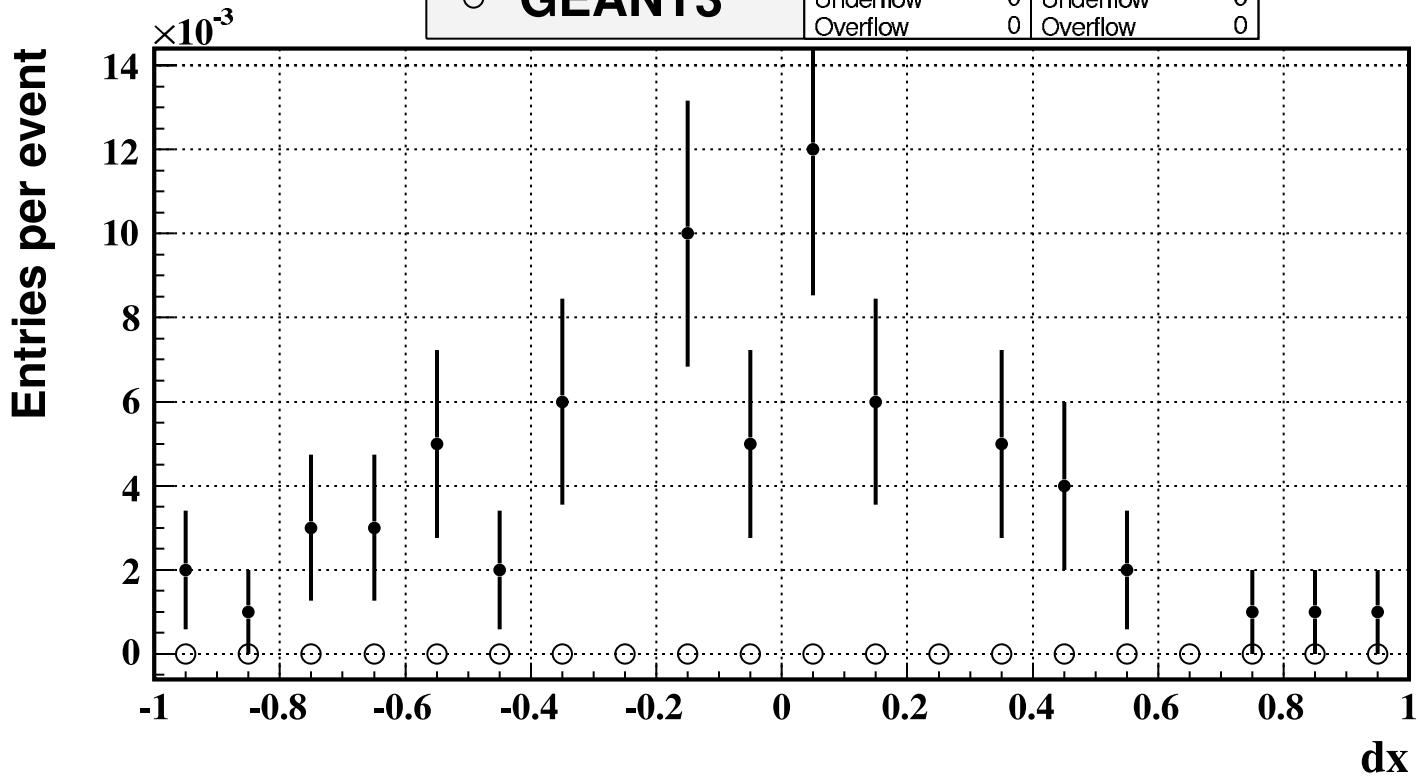


100 GeV Primary γ
Secondary π^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	69	Entries	0
Mean	-0.0839	Mean	0
RMS	0.422	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

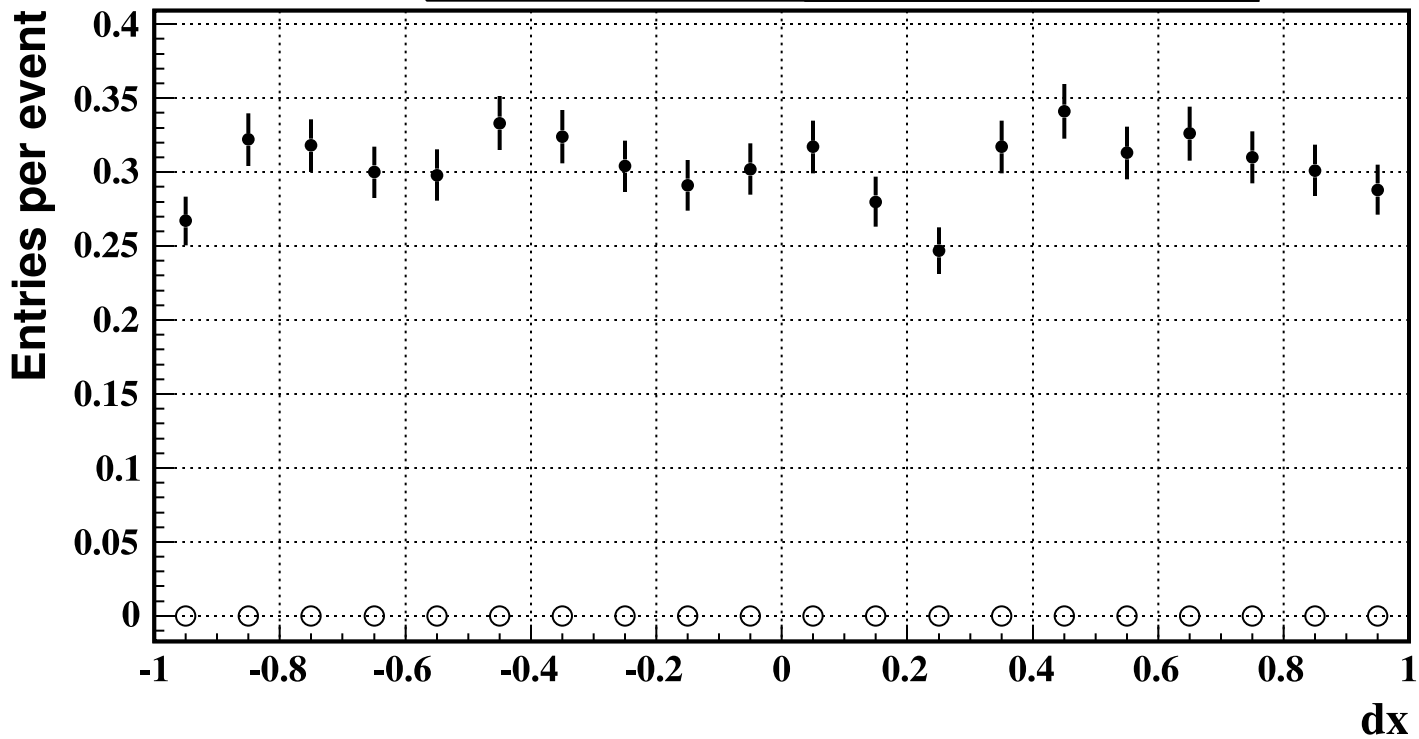


100 GeV Primary γ
Secondary n

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	6099	Entries	0
Mean	0.00155	Mean	0
RMS	0.576	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

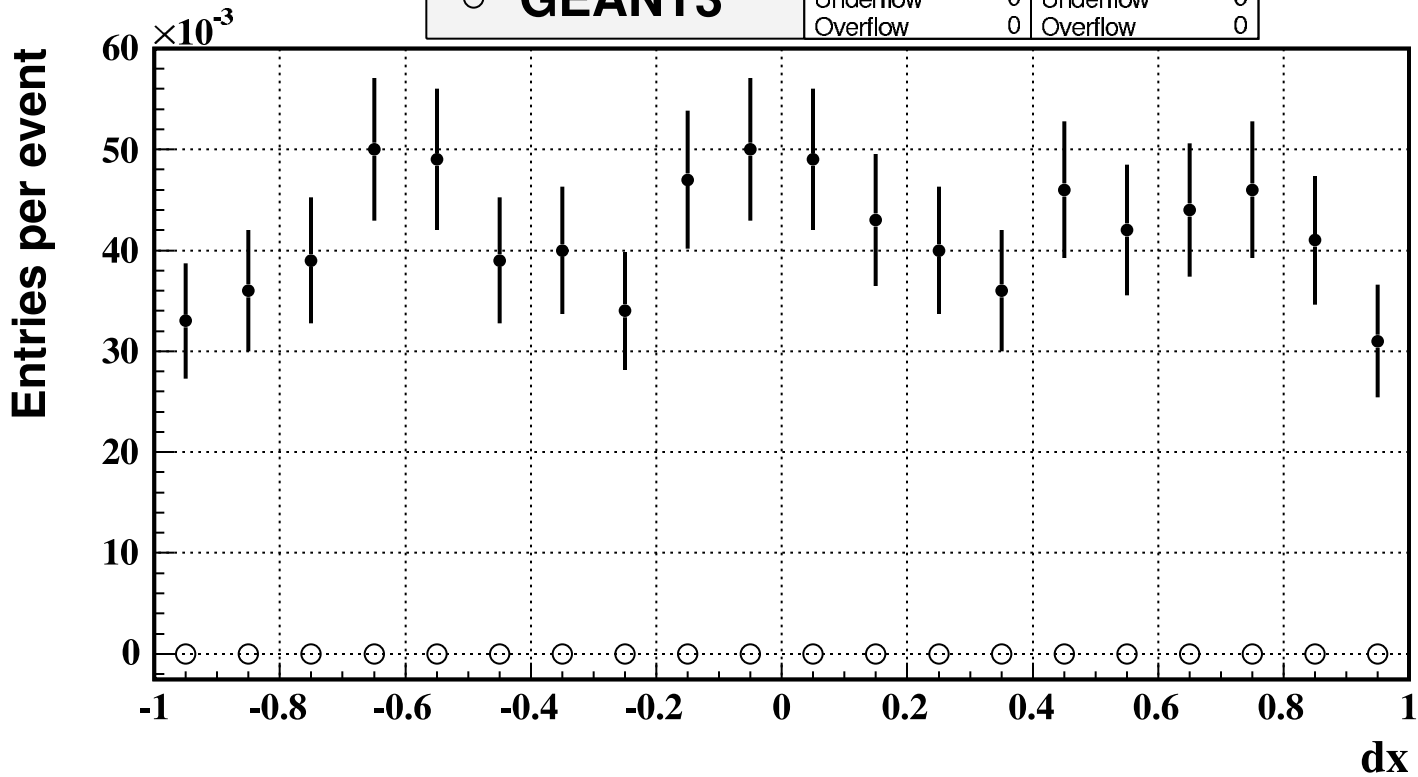


100 GeV Primary γ
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	835	Entries	0
Mean	0.00301	Mean	0
RMS	0.562	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

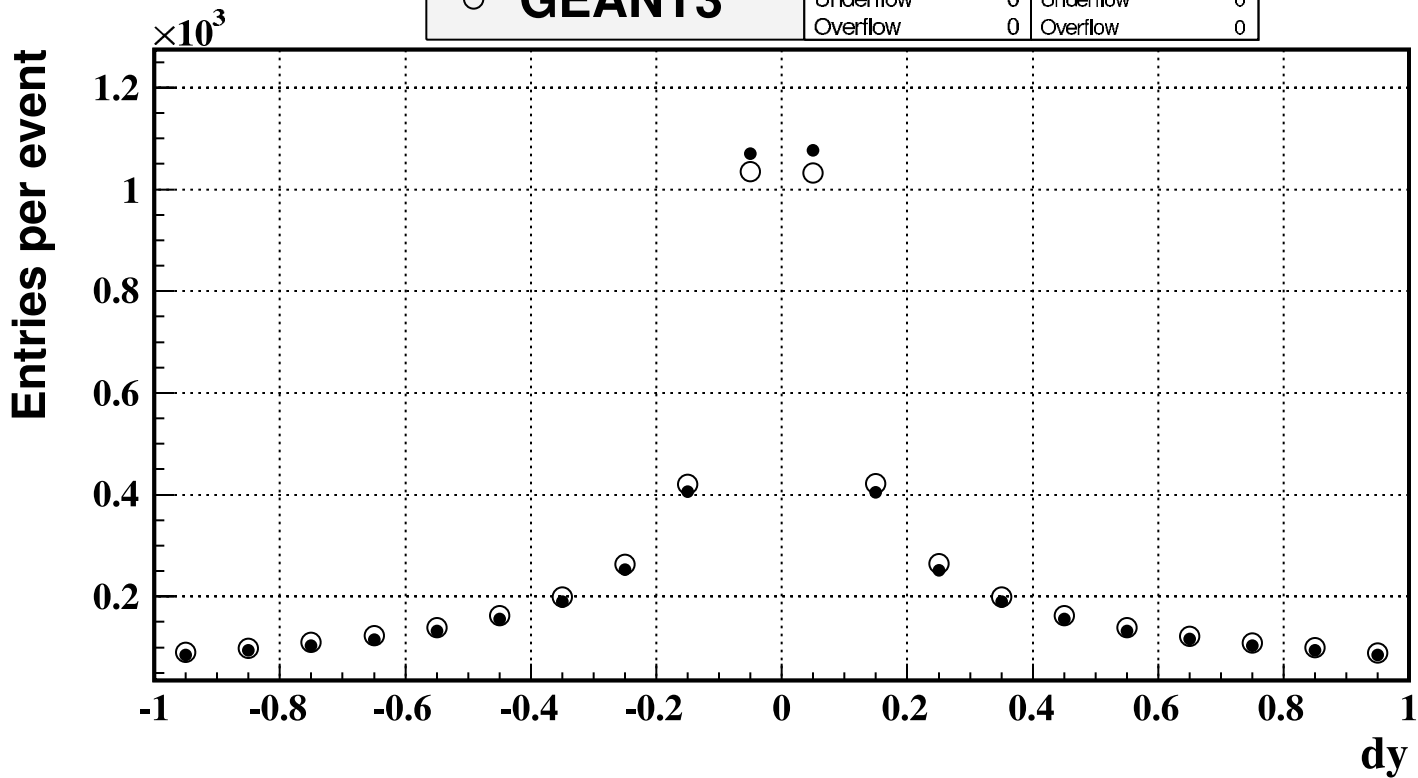


100 GeV Primary γ
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	5214884	Entries	5274786
Mean	-1.11e-06	Mean	-0.000165
RMS	0.378	RMS	0.385
Underflow	0	Underflow	0
Overflow	0	Overflow	0

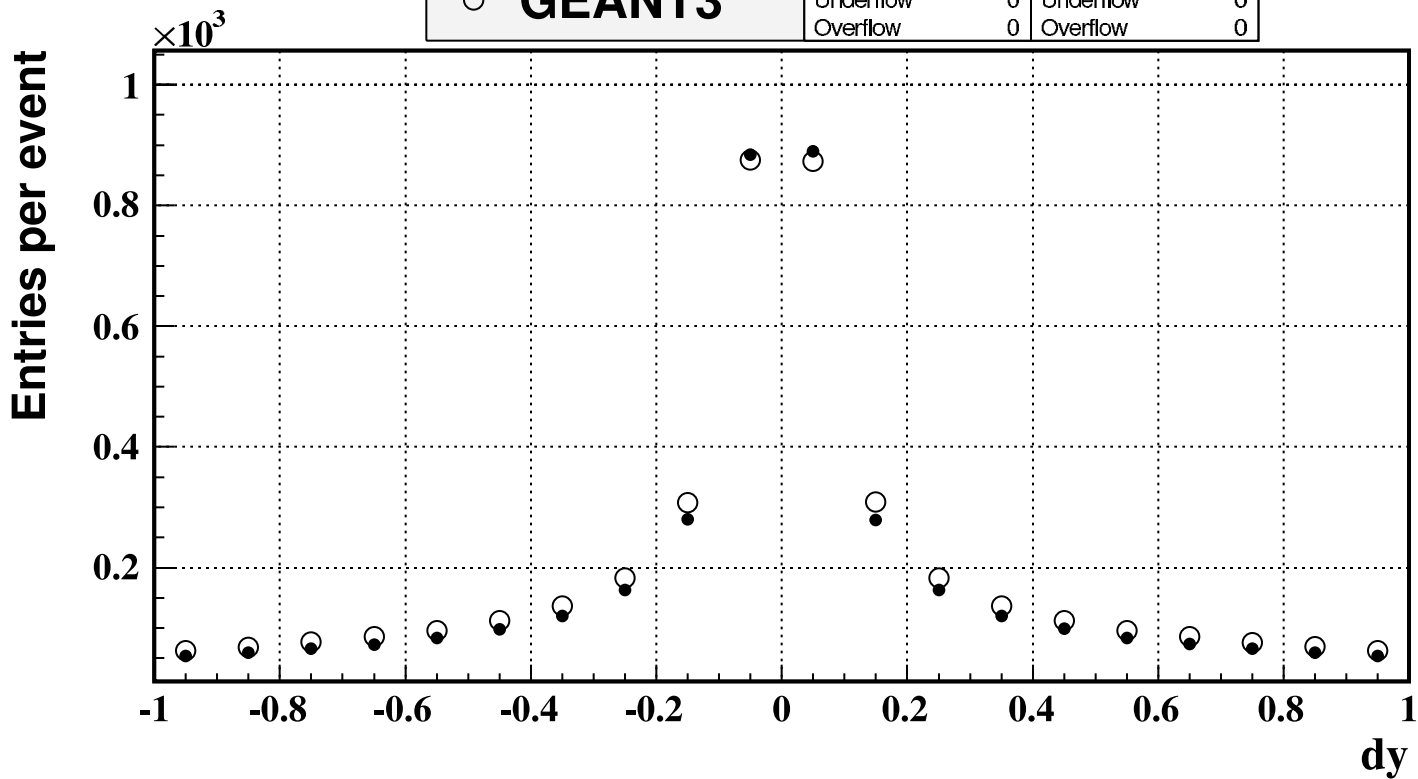


100 GeV Primary γ
Secondary γ

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	3766386	Entries	4005133
Mean	-1.66e-05	Mean	-1.65e-05
RMS	0.355	RMS	0.369
Underflow	0	Underflow	0
Overflow	0	Overflow	0

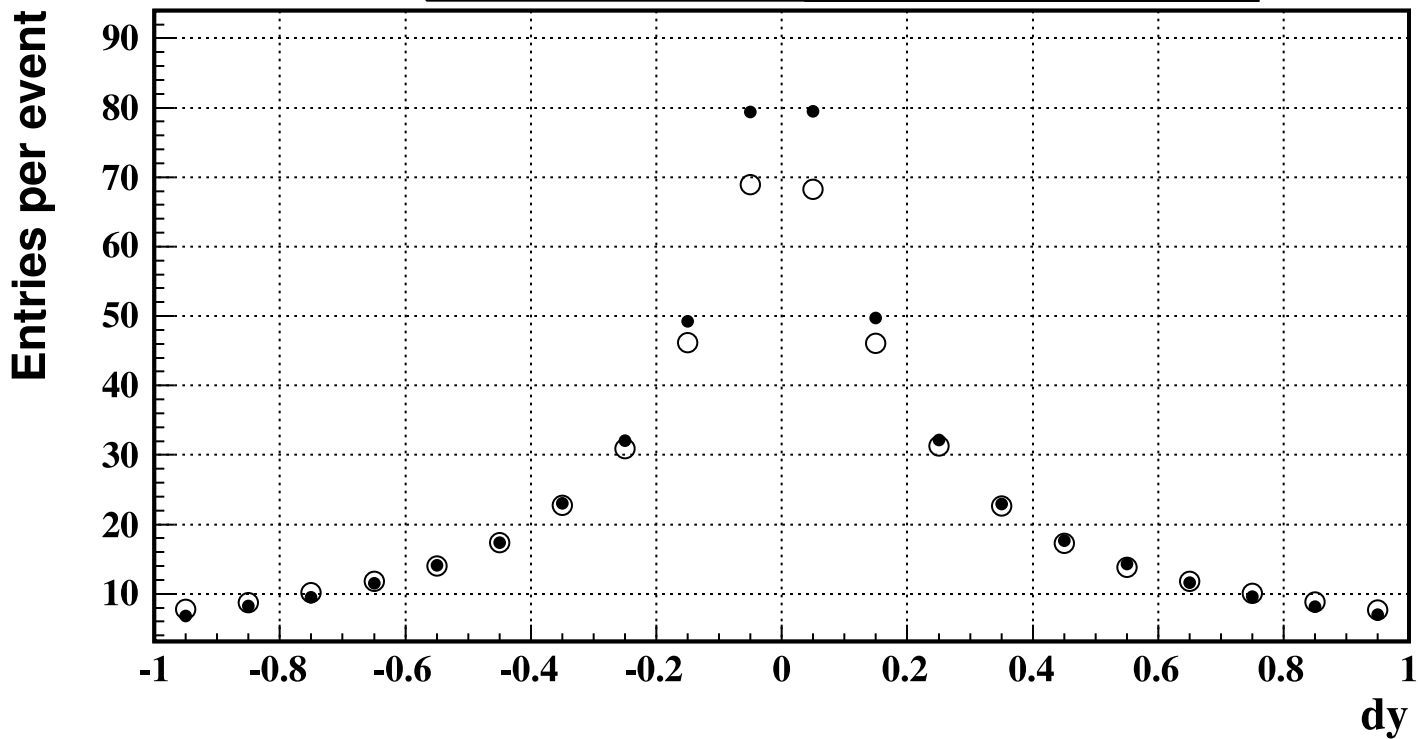


100 GeV Primary γ
Secondary e^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	503677	Entries	476162
Mean	0.000787	Mean	-0.000453
RMS	0.379	RMS	0.397
Underflow	0	Underflow	0
Overflow	0	Overflow	0

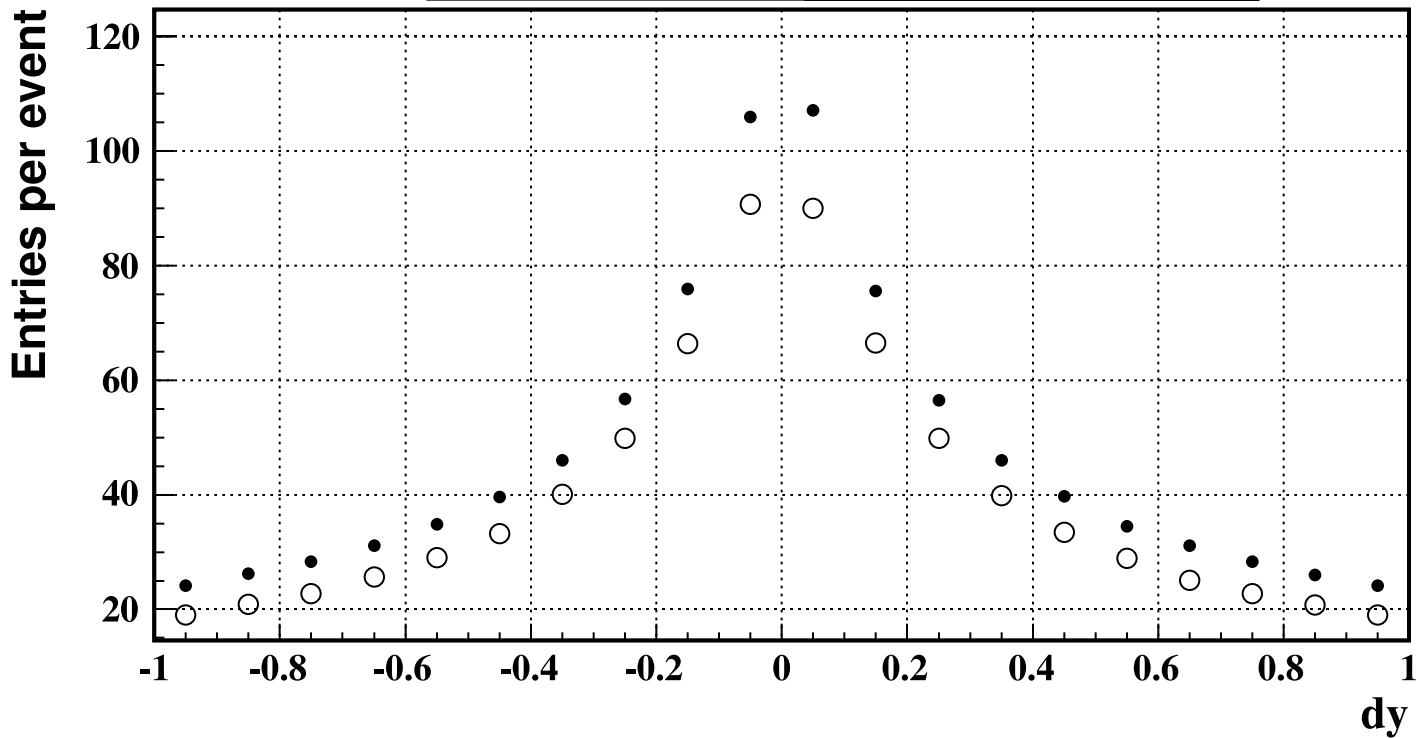


100 GeV Primary γ
Secondary e^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	937687	Entries	793491
Mean	-0.000396	Mean	-0.000744
RMS	0.46	RMS	0.452
Underflow	0	Underflow	0
Overflow	0	Overflow	0

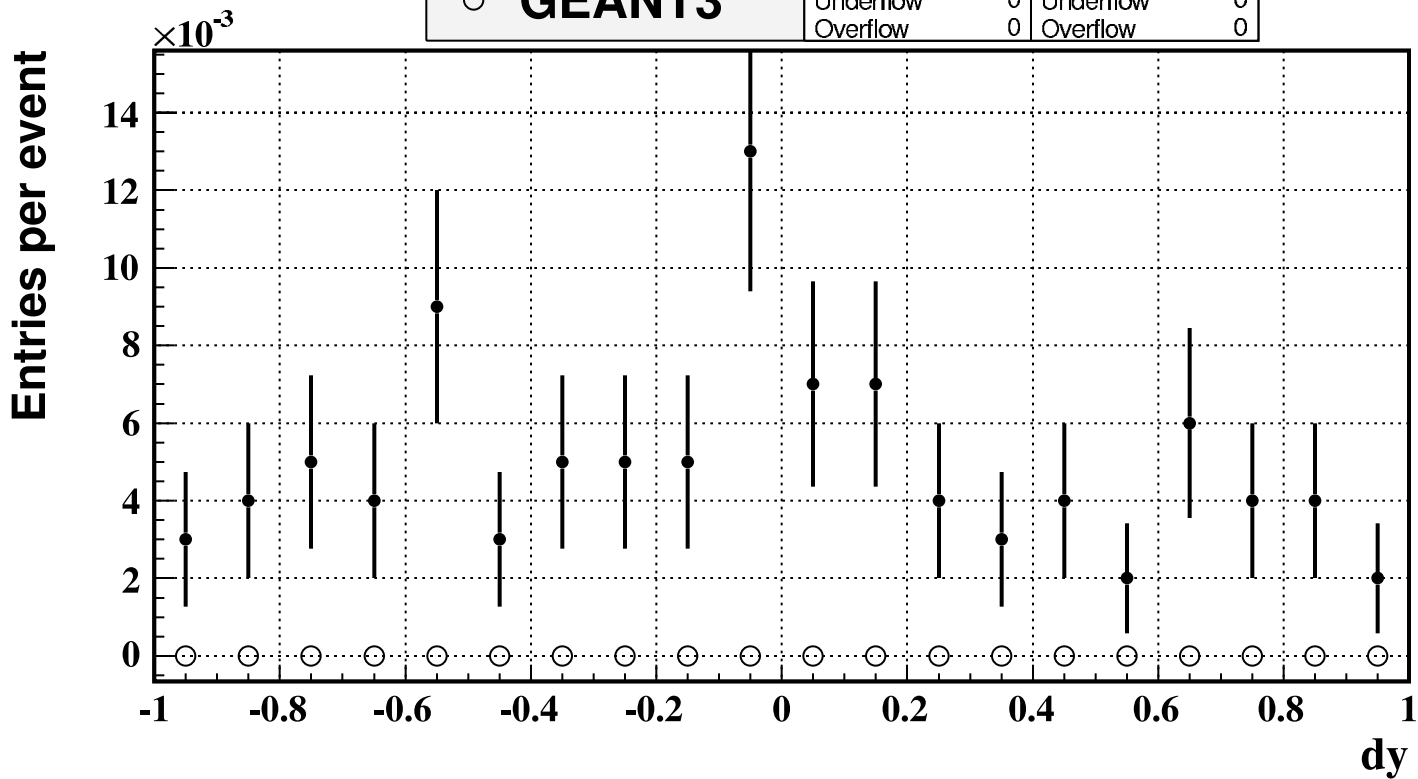


100 GeV Primary γ
Secondary π^+

● GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	99	Entries	0
Mean	-0.0524	Mean	0
RMS	0.515	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

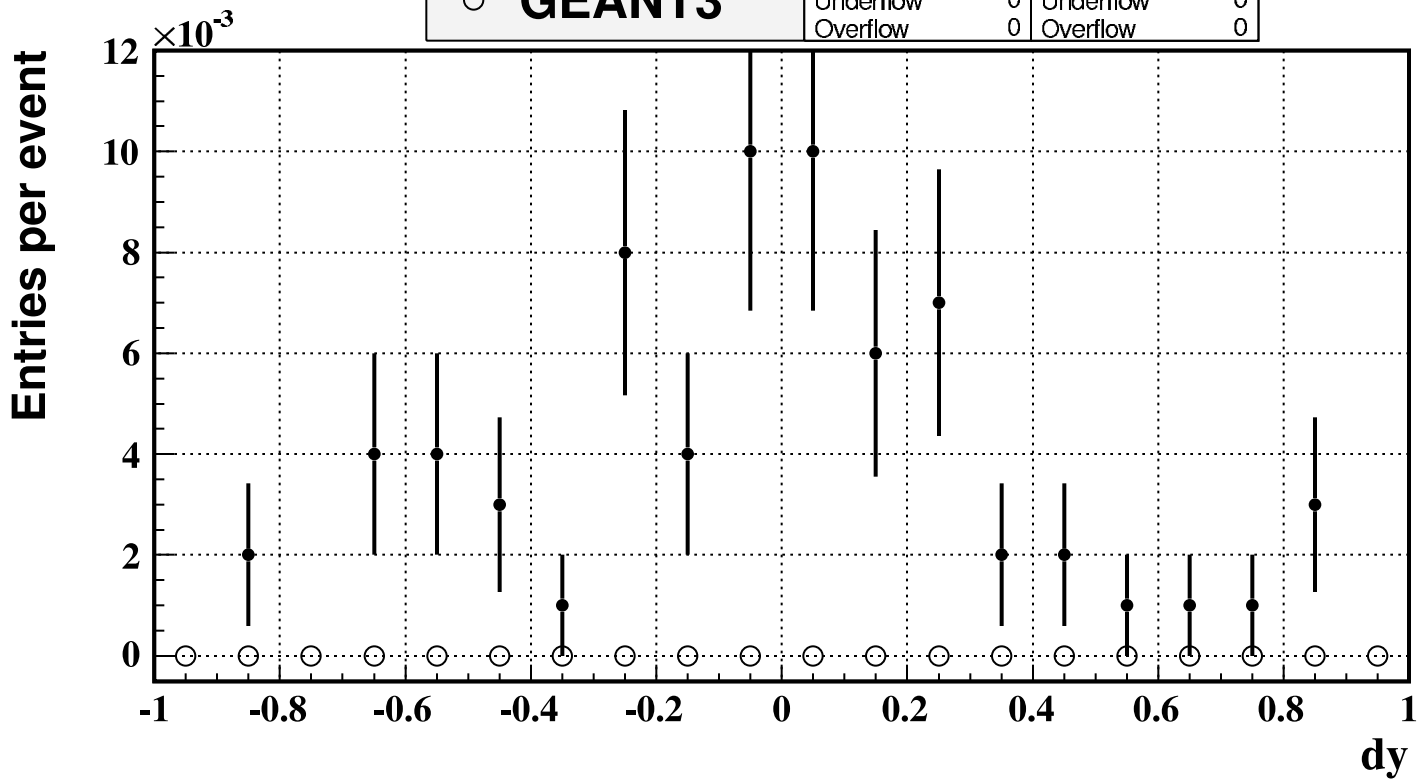


100 GeV Primary γ
Secondary π^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	69	Entries	0
Mean	-0.0319	Mean	0
RMS	0.39	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

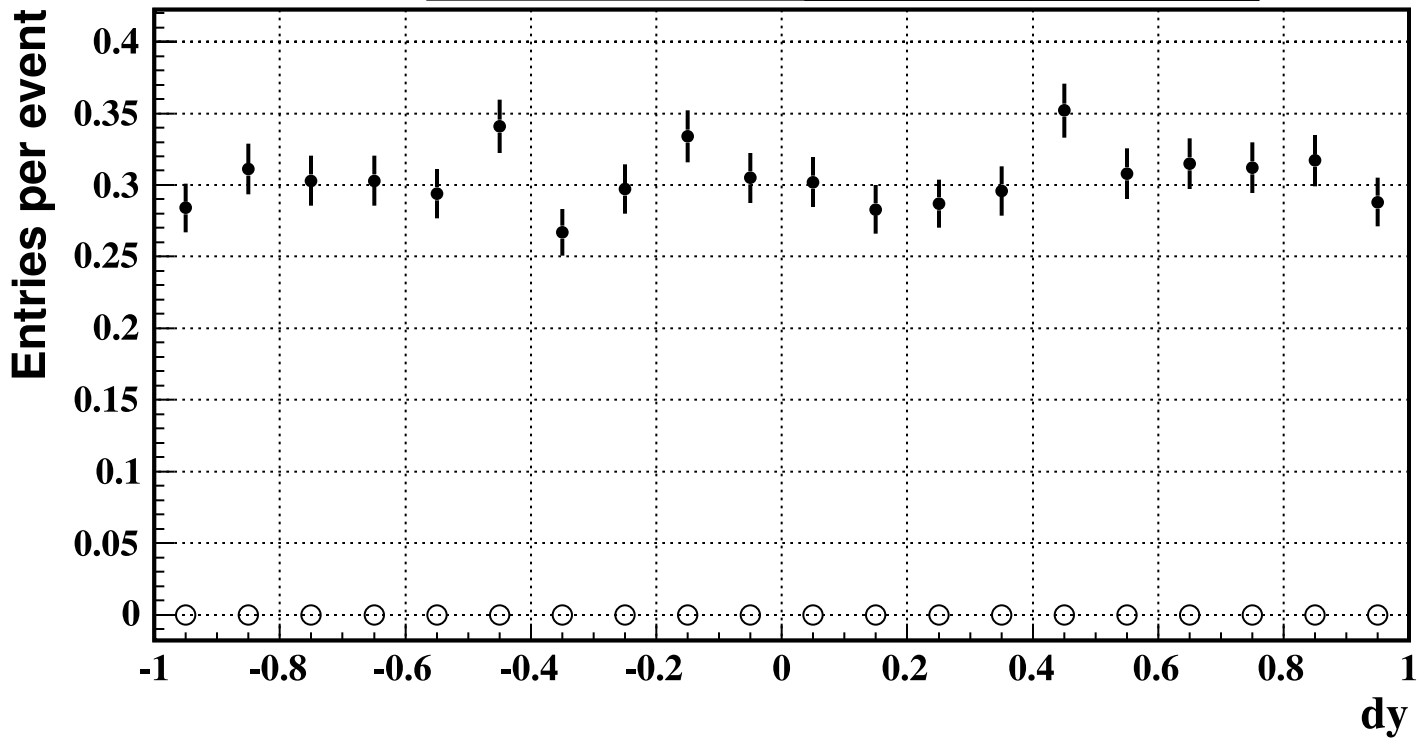


100 GeV Primary γ
Secondary n

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	6099	Entries	0
Mean	0.00582	Mean	0
RMS	0.576	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

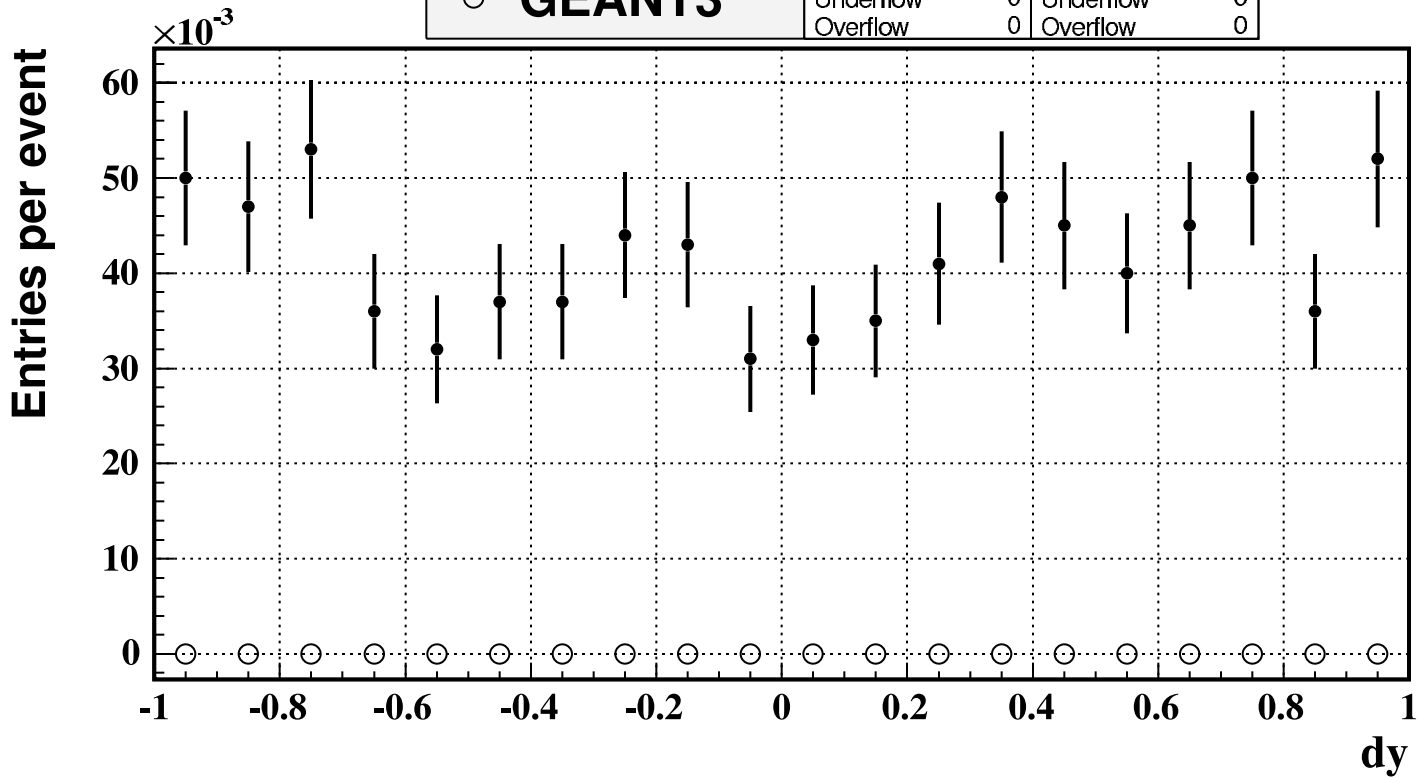


100 GeV Primary γ
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	835	Entries	0
Mean	0.0078	Mean	0
RMS	0.601	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

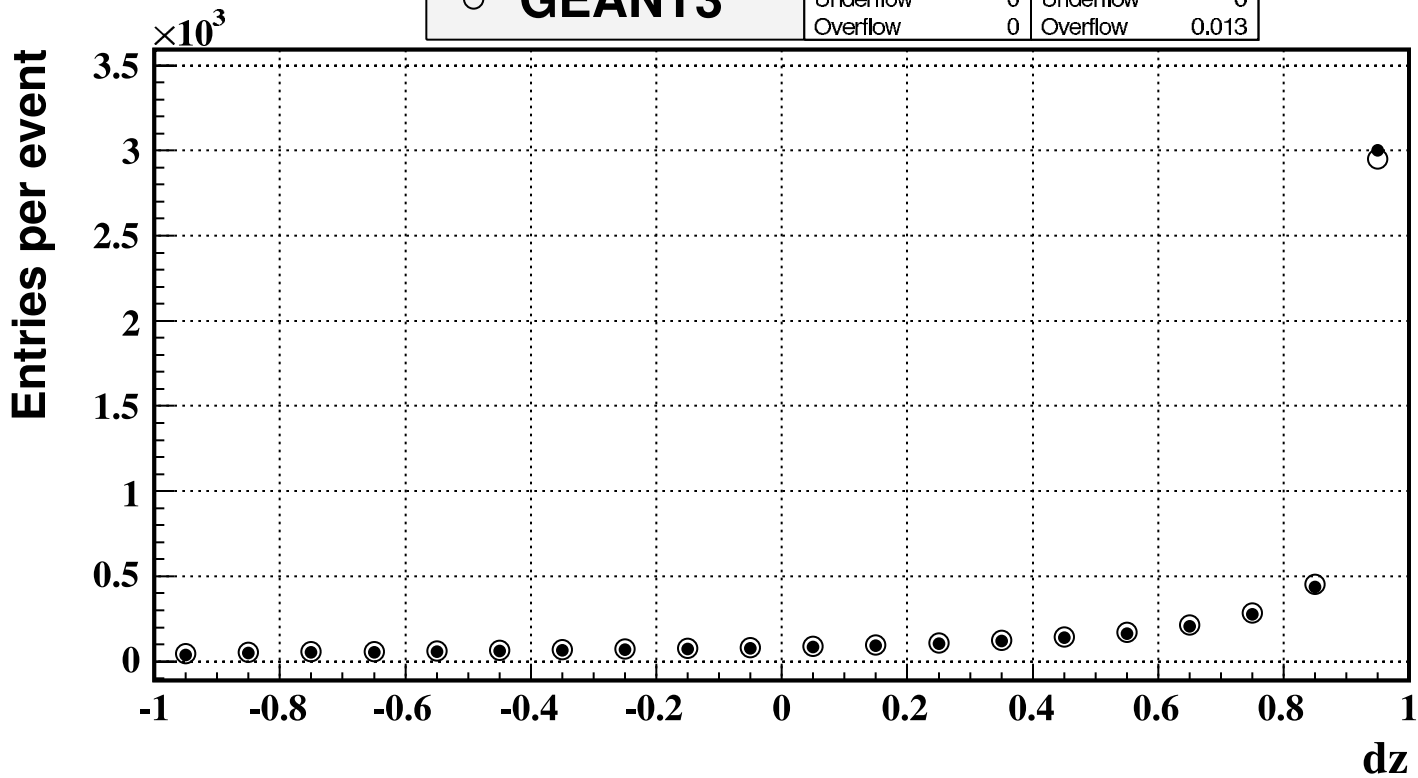


100 GeV Primary γ
Secondary

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	5214884	Entries	5274786
Mean	0.697	Mean	0.682
RMS	0.477	RMS	0.488
Underflow	0	Underflow	0
Overflow	0	Overflow	0.013

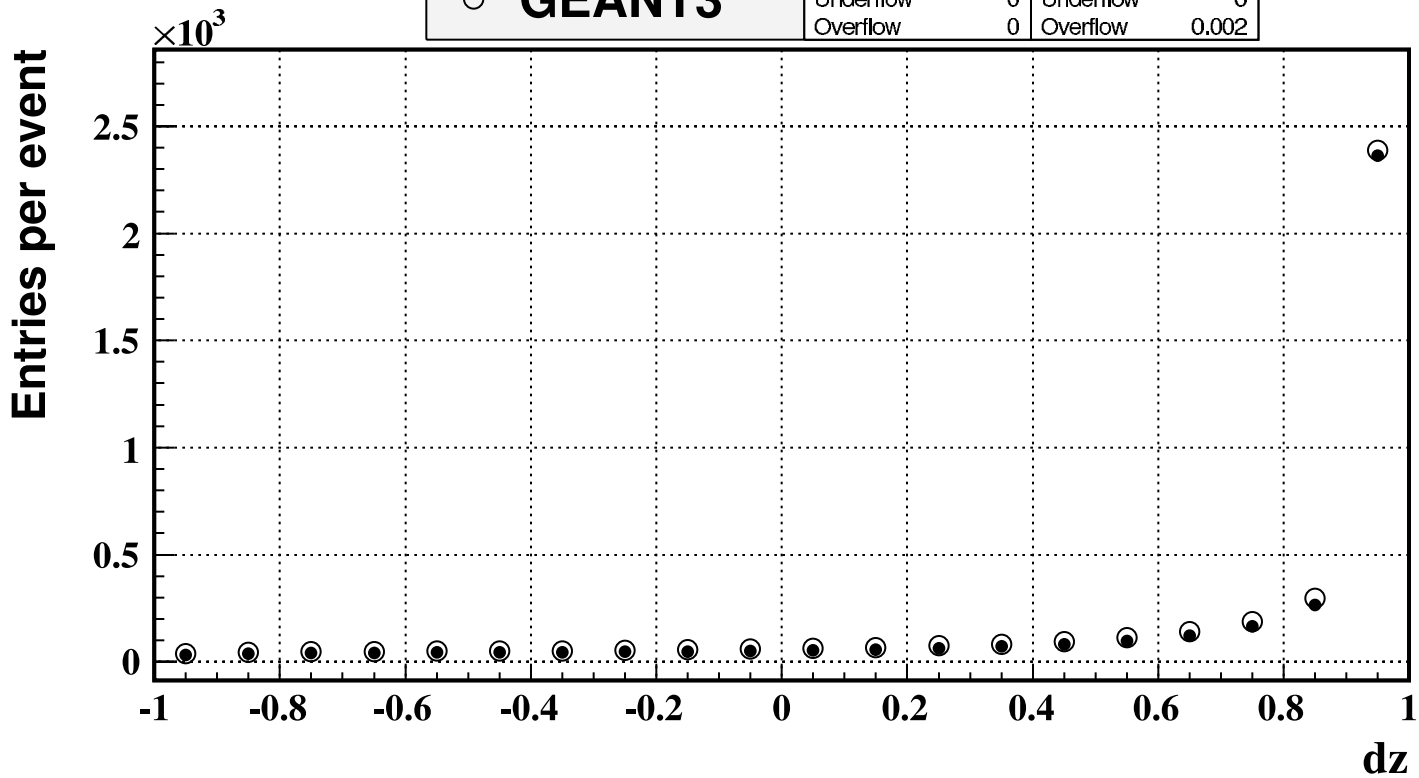


100 GeV Primary γ
Secondary γ

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	3766386	Entries	4005133
Mean	0.716	Mean	0.691
RMS	0.486	RMS	0.5
Underflow	0	Underflow	0
Overflow	0	Overflow	0.002

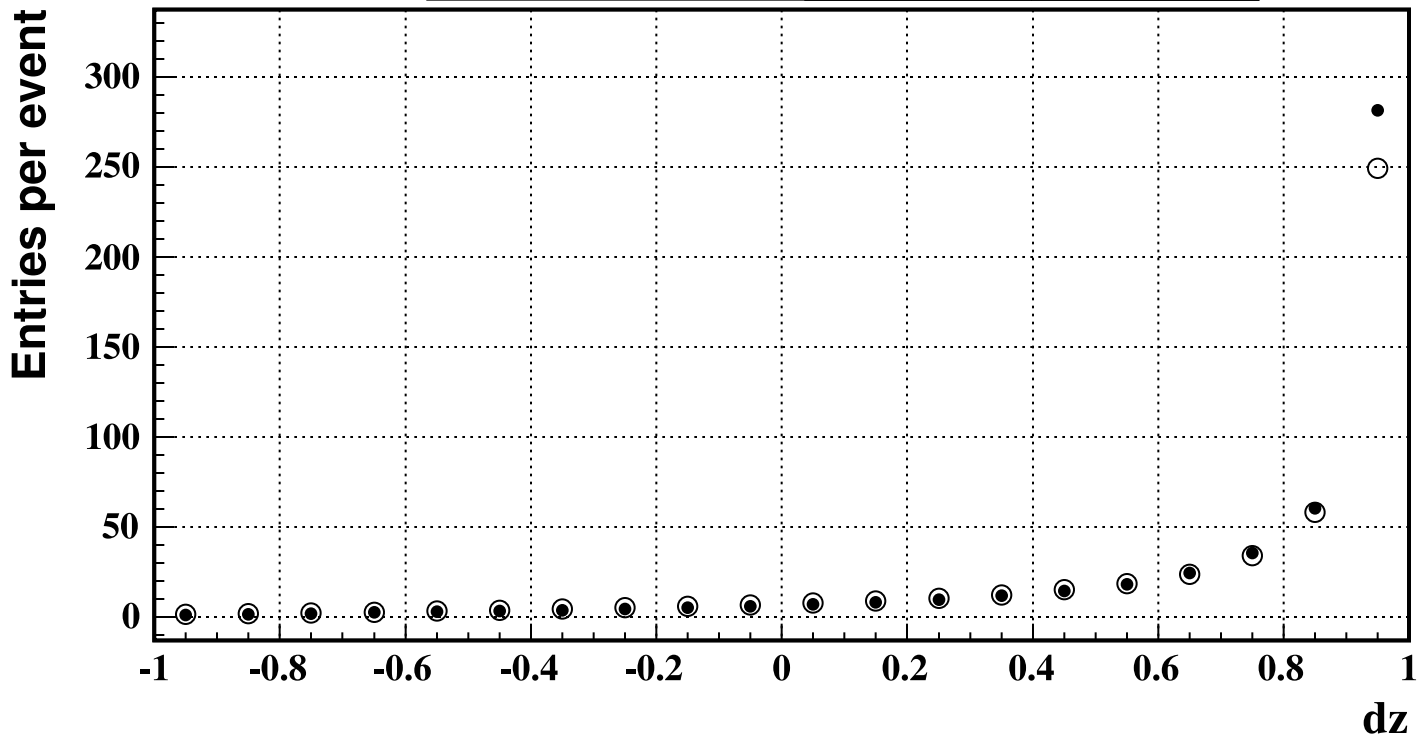


100 GeV Primary γ
Secondary e^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	503677	Entries	476162
Mean	0.756	Mean	0.724
RMS	0.376	RMS	0.401
Underflow	0	Underflow	0
Overflow	0	Overflow	0.007

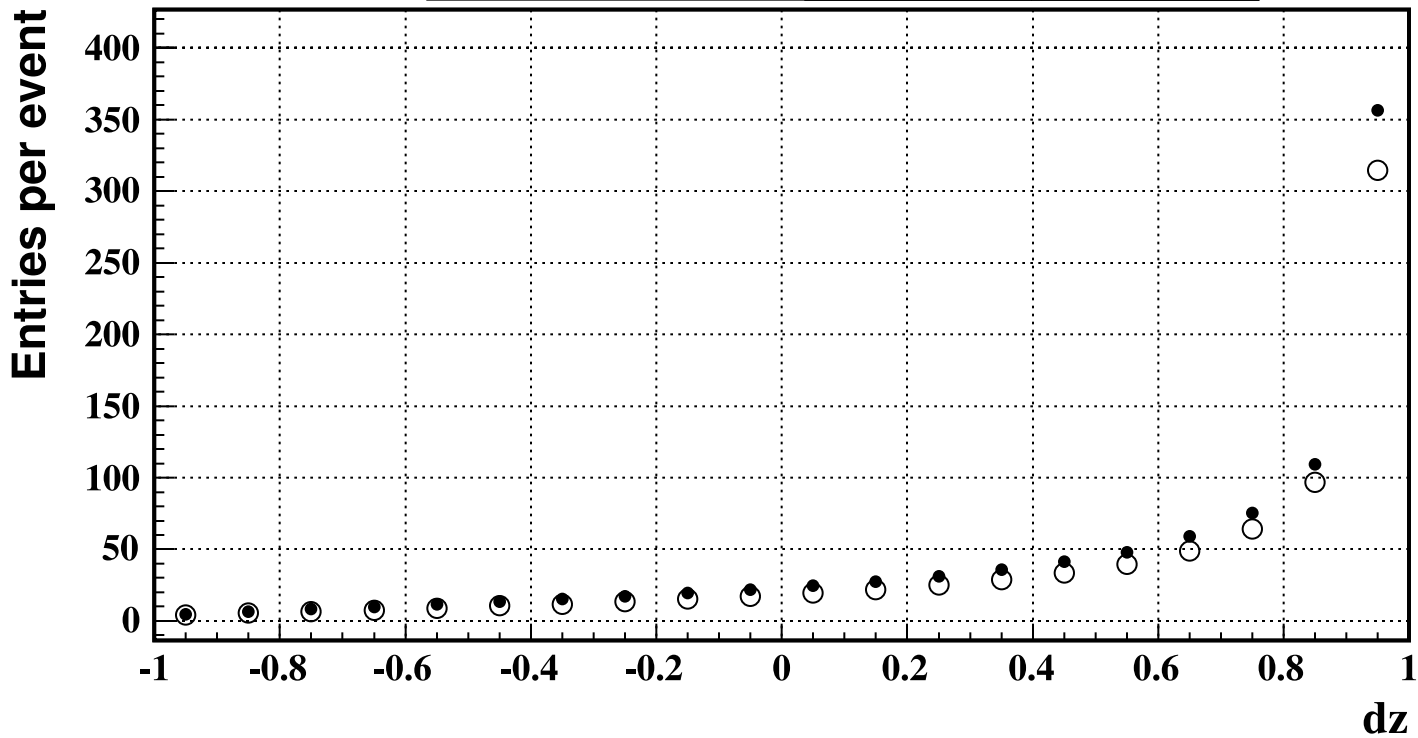


100 GeV Primary γ
Secondary e^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	937687	Entries	793491
Mean	0.593	Mean	0.612
RMS	0.474	RMS	0.466
Underflow	0	Underflow	0
Overflow	0	Overflow	0.004

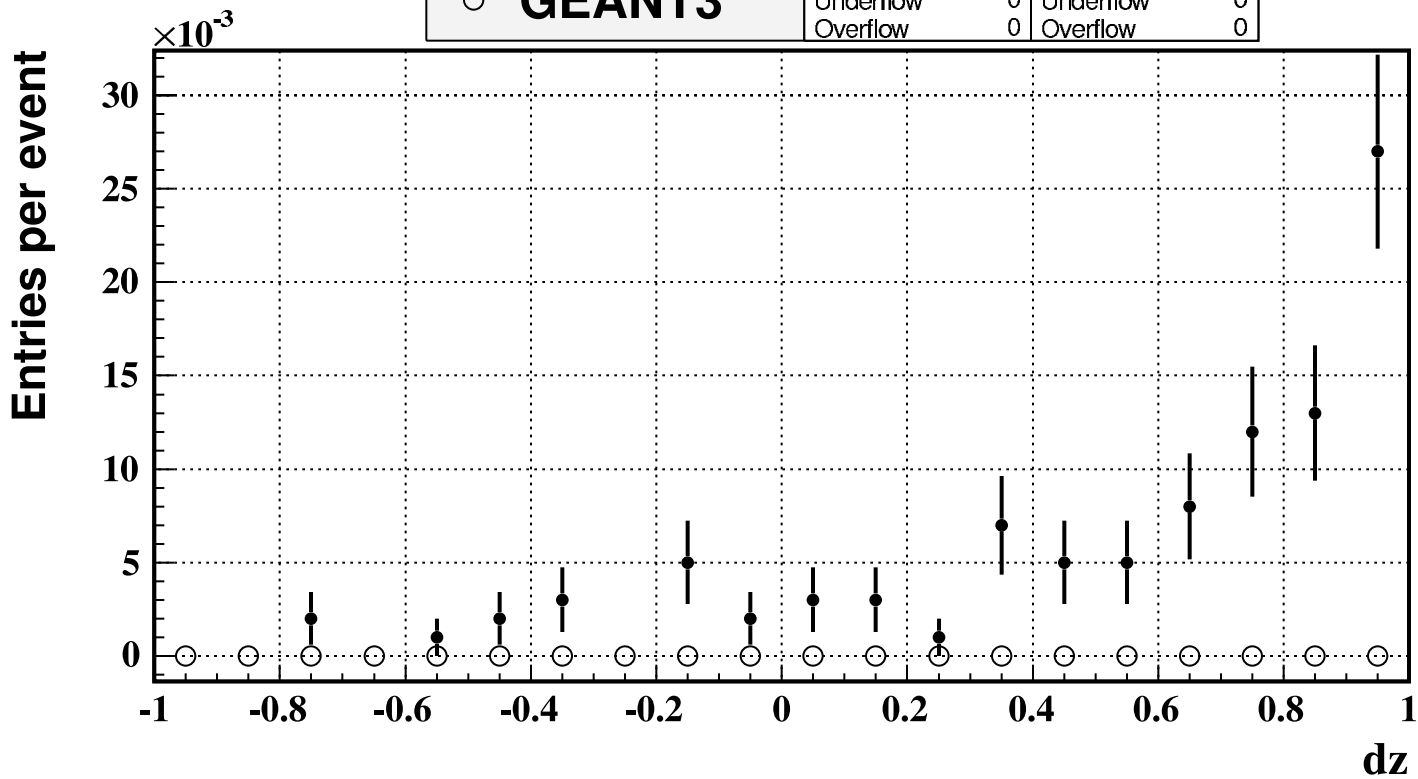


100 GeV Primary γ
Secondary π^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	99	Entries	0
Mean	0.557	Mean	0
RMS	0.45	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

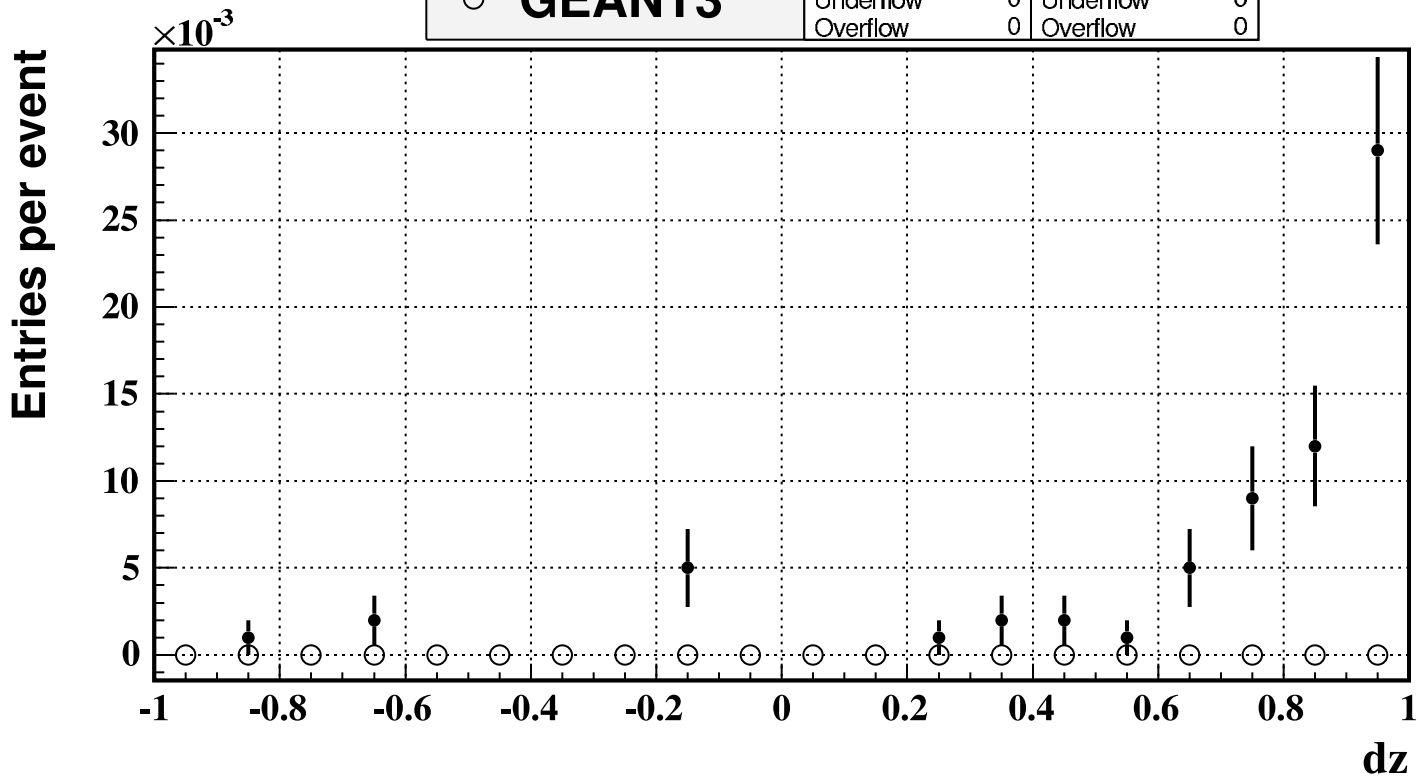


100 GeV Primary γ
Secondary π^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	69	Entries	0
Mean	0.692	Mean	0
RMS	0.427	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

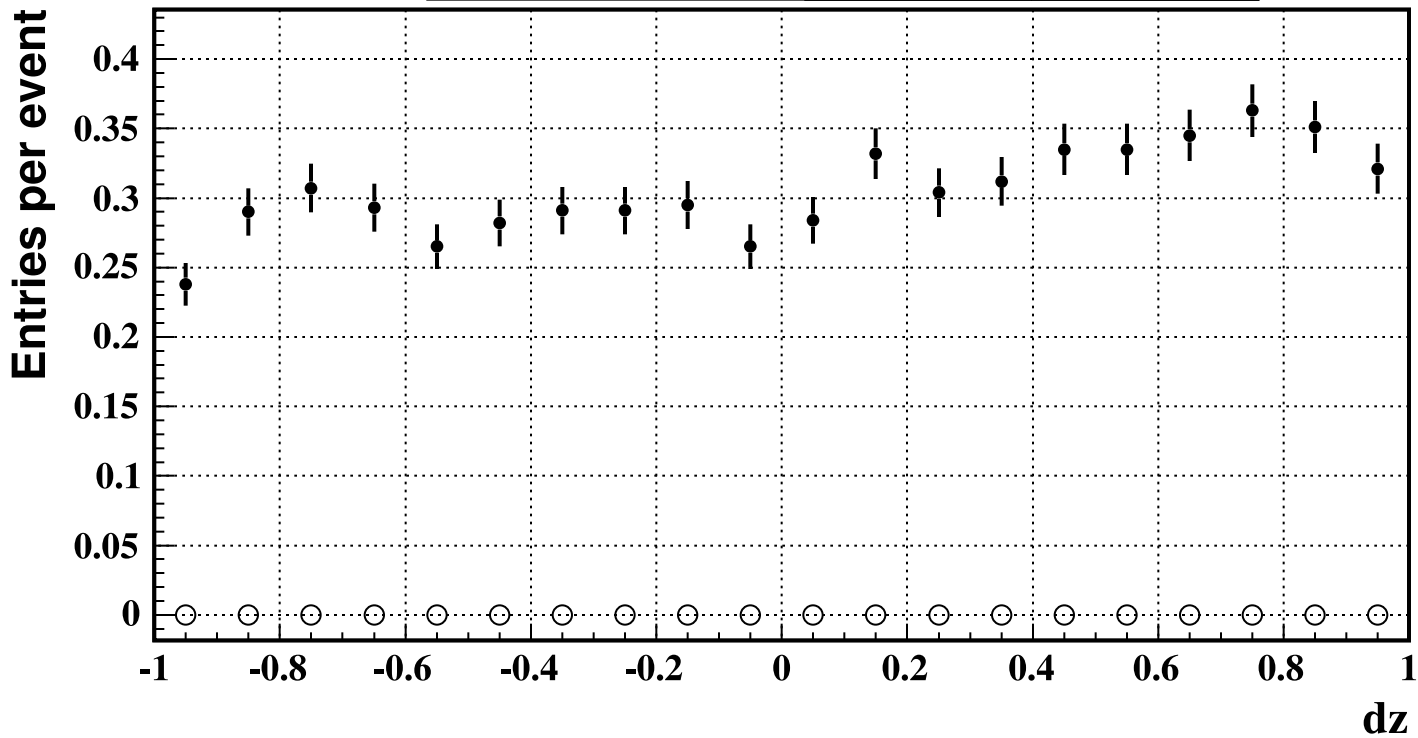


100 GeV Primary γ
Secondary n

• **GEANT4**

○ **GEANT3**

	GEANT4	GEANT3
Entries	6099	0
Mean	0.0466	0
RMS	0.578	0
Underflow	0	0
Overflow	0	0

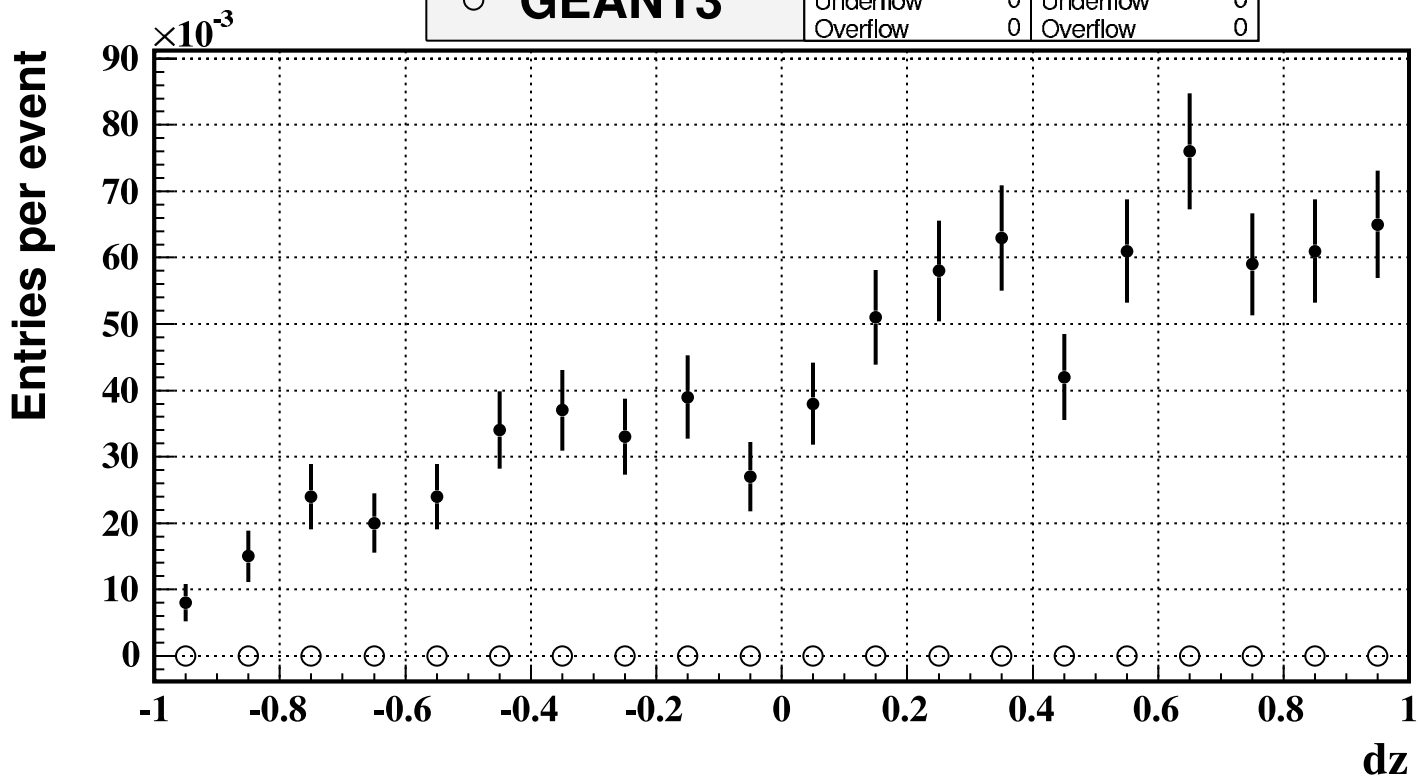


100 GeV Primary γ
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	835	Entries	0
Mean	0.237	Mean	0
RMS	0.516	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

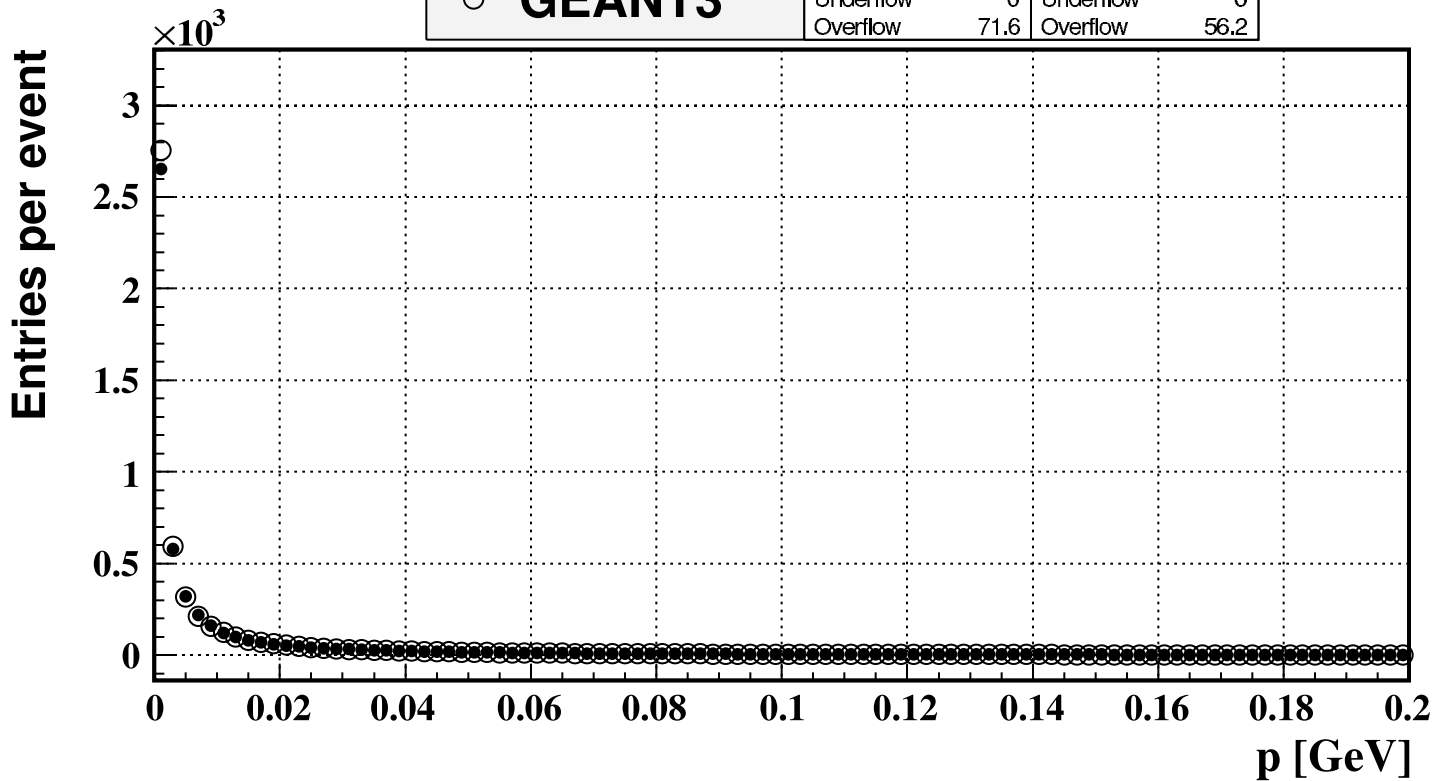


100 GeV Primary γ
Secondary

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	5214884	5274786
Mean	0.0118	0.011
RMS	0.0261	0.0247
Underflow	0	0
Overflow	71.6	56.2

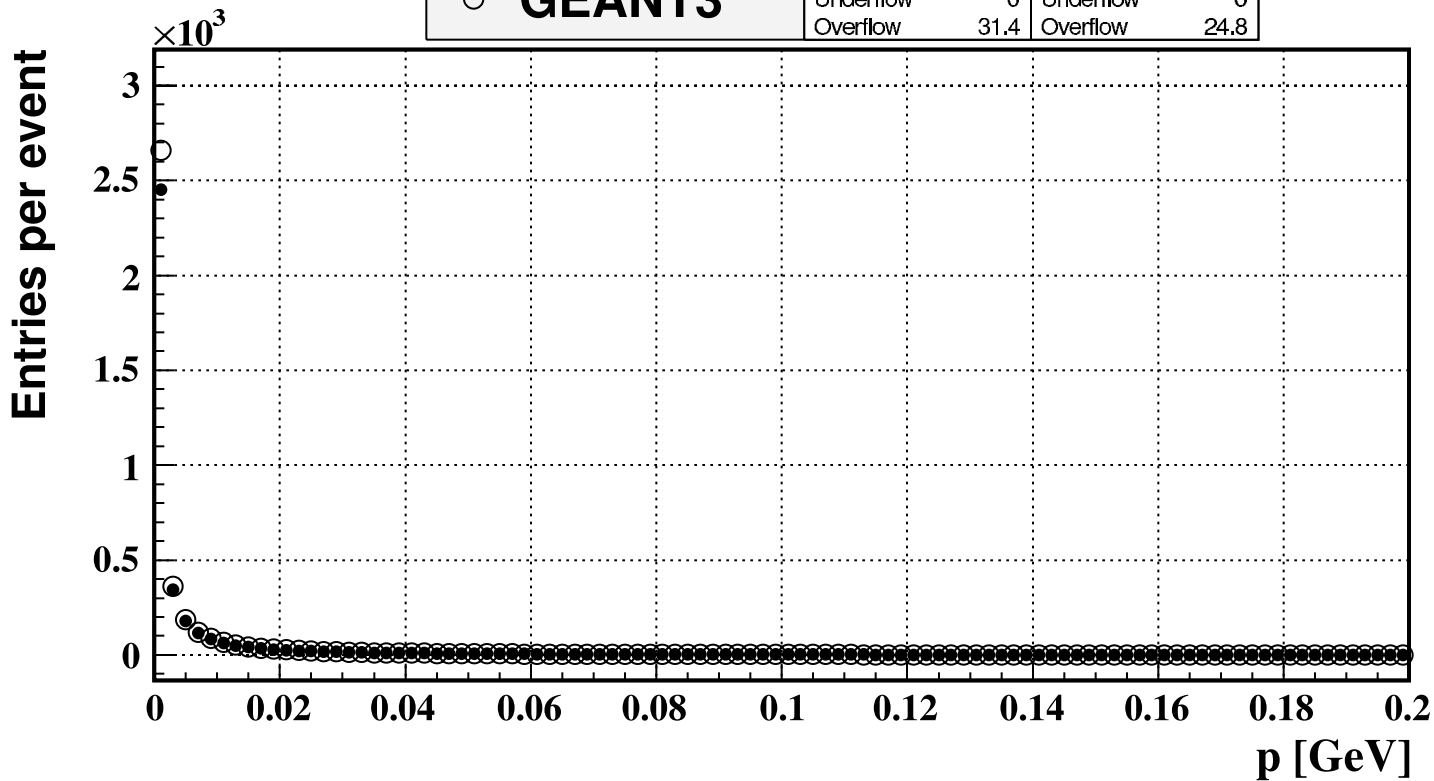


100 GeV Primary γ
Secondary γ

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	3766386	4005133
Mean	0.00738	0.00683
RMS	0.0204	0.0192
Underflow	0	0
Overflow	31.4	24.8

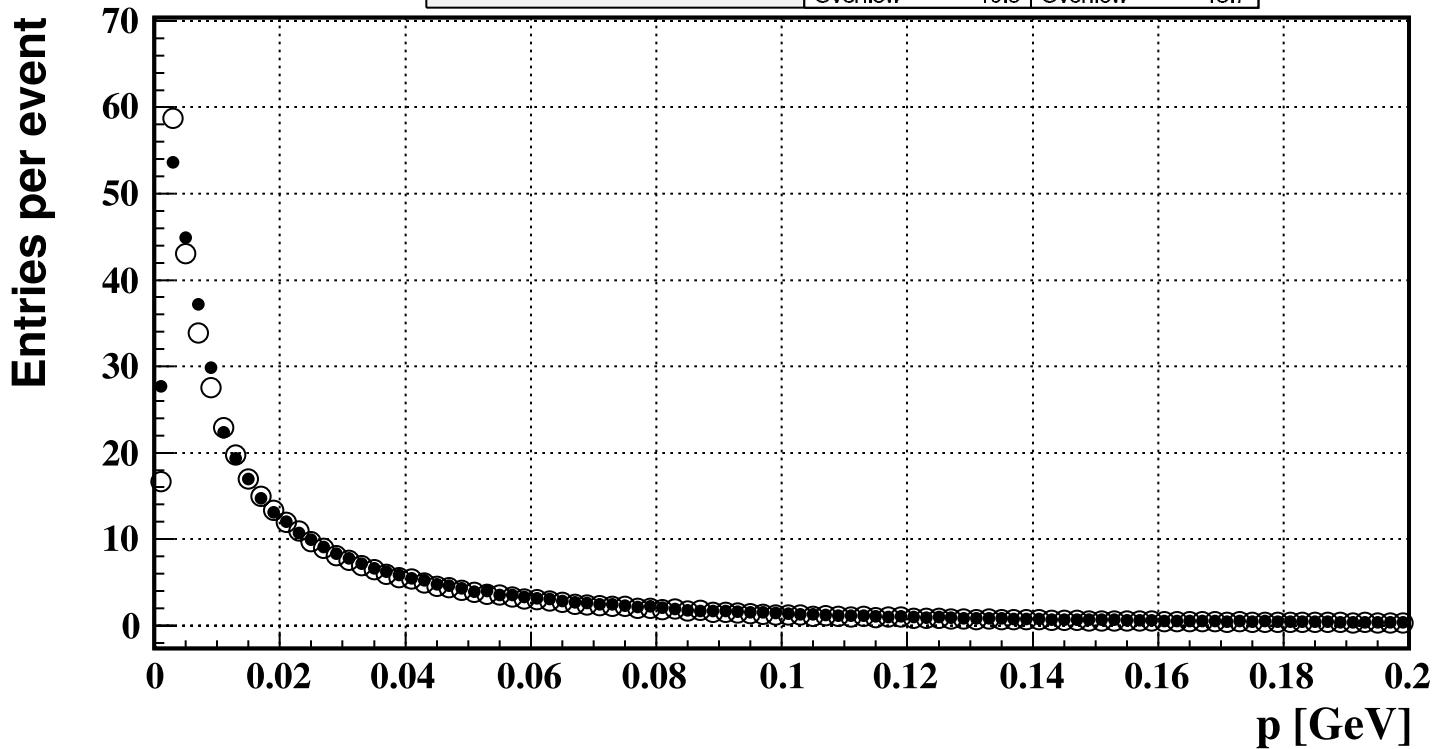


100 GeV Primary γ
Secondary e^+

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	503677	Entries	476162
Mean	0.0308	Mean	0.03
RMS	0.0383	RMS	0.037
Underflow	0	Underflow	0
Overflow	19.5	Overflow	15.7

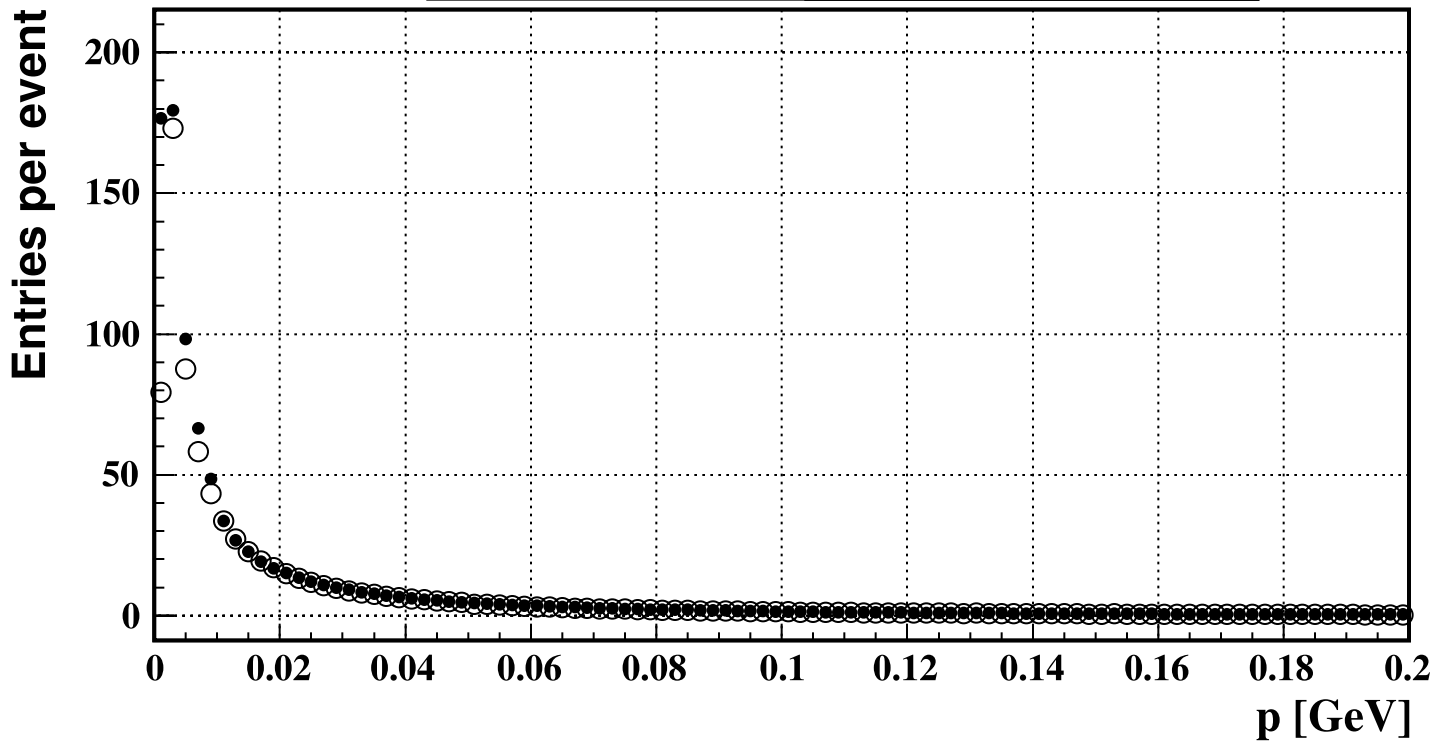


100 GeV Primary γ
Secondary e^-

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	937687	Entries	793491
Mean	0.0192	Mean	0.0208
RMS	0.0315	RMS	0.0317
Underflow	0	Underflow	0
Overflow	19.5	Overflow	15.7

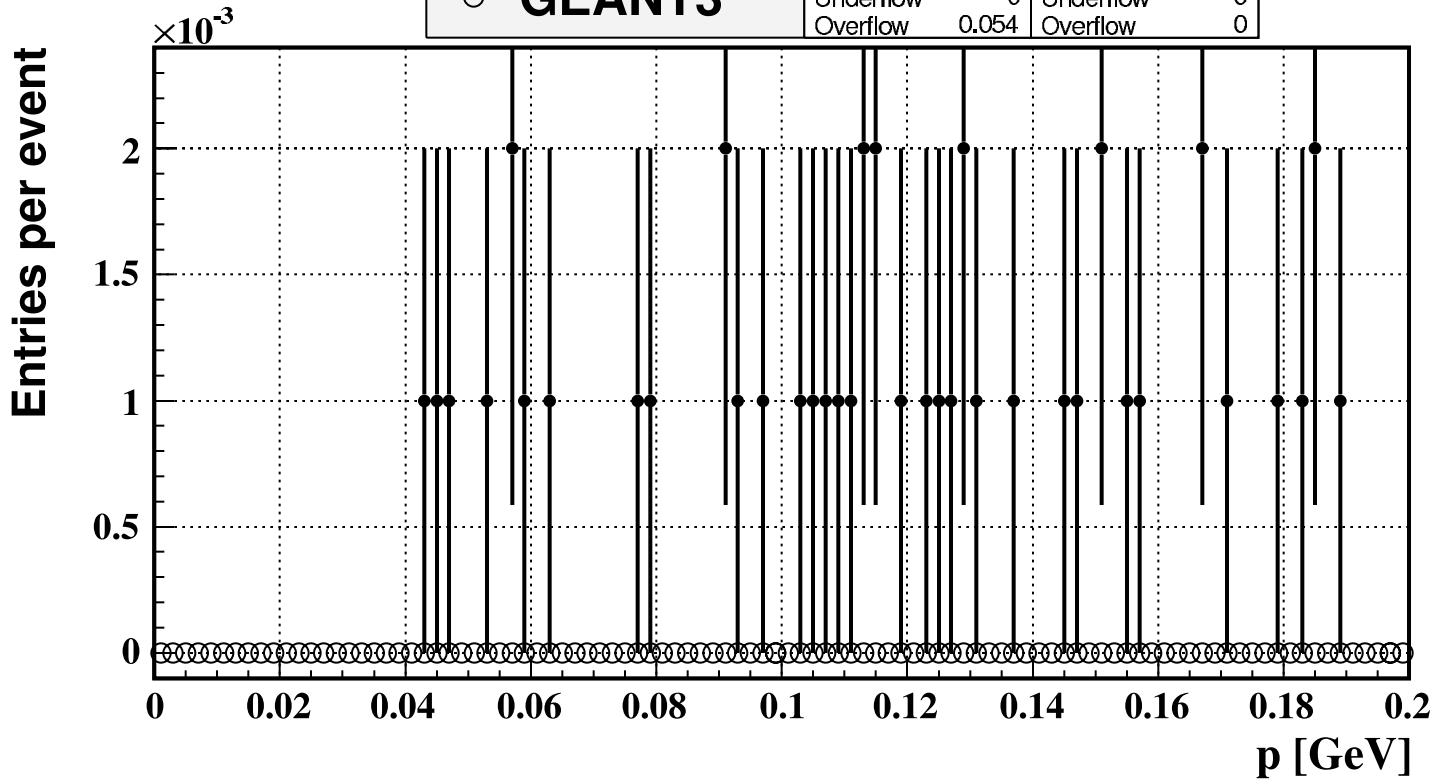


100 GeV Primary γ
Secondary π^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	99	Entries	0
Mean	0.118	Mean	0
RMS	0.0416	RMS	0
Underflow	0	Underflow	0
Overflow	0.054	Overflow	0

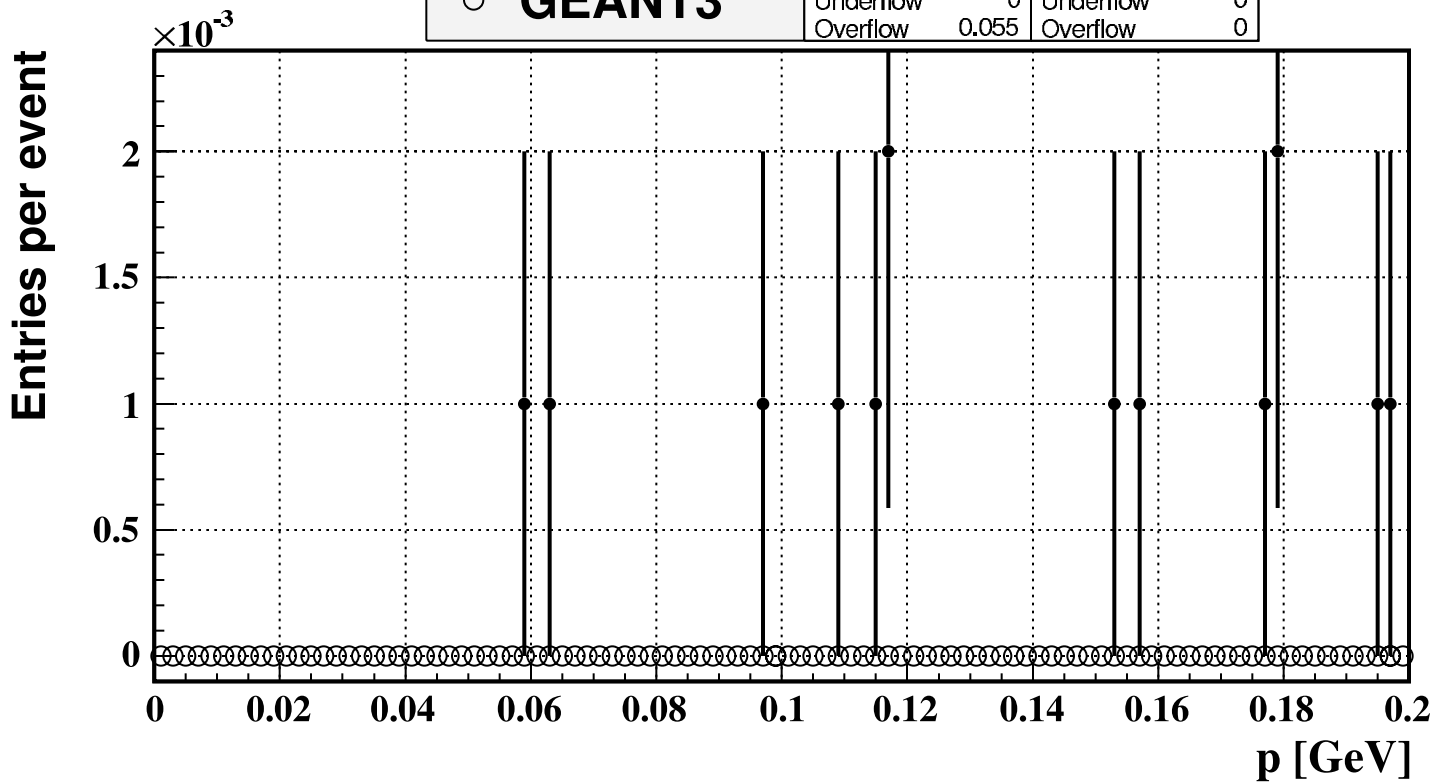


100 GeV Primary γ
Secondary π^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	69	Entries	0
Mean	0.137	Mean	0
RMS	0.0447	RMS	0
Underflow	0	Underflow	0
Overflow	0.055	Overflow	0

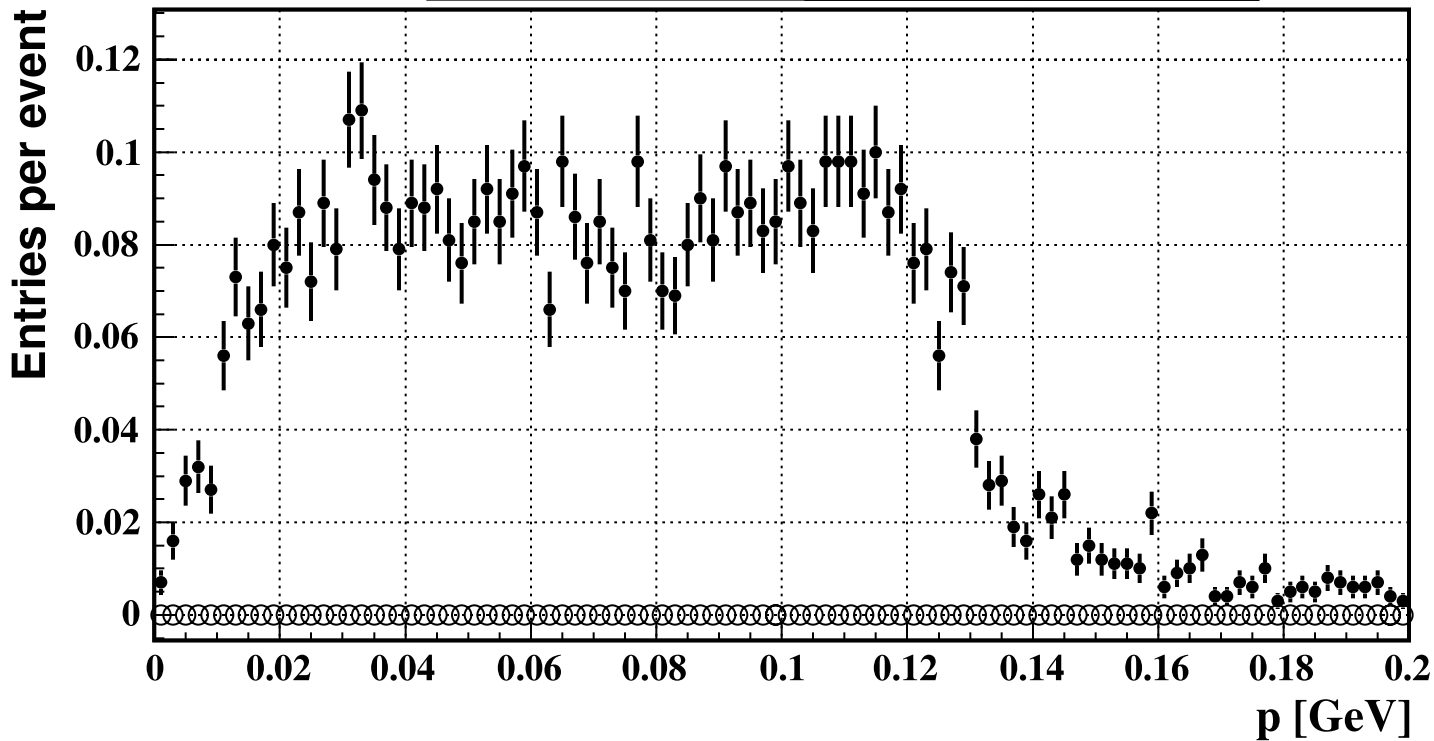


100 GeV Primary γ
Secondary n

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	6099	Entries	0
Mean	0.0756	Mean	0
RMS	0.0406	RMS	0
Underflow	0	Underflow	0
Overflow	0.528	Overflow	0

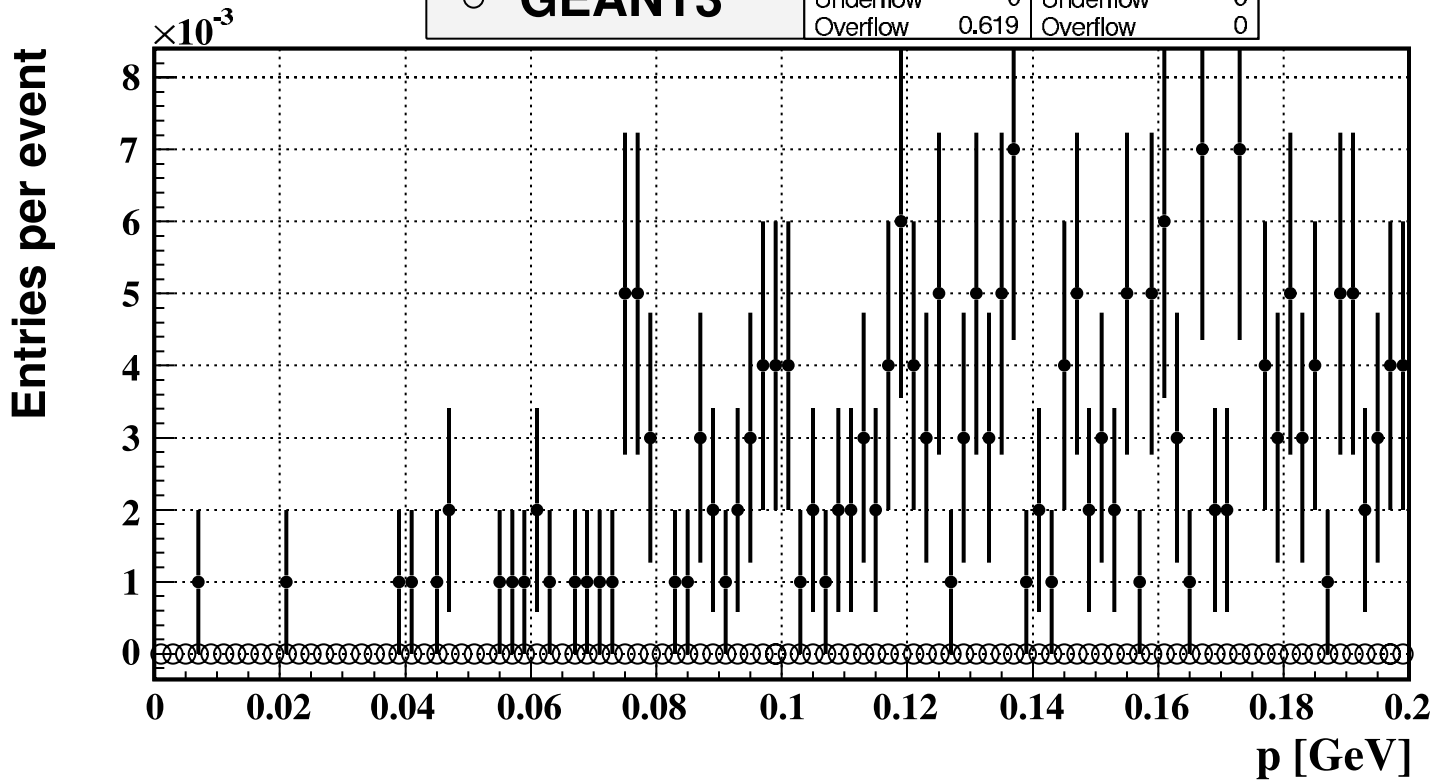


100 GeV Primary γ
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	835	Entries	0
Mean	0.134	Mean	0
RMS	0.042	RMS	0
Underflow	0	Underflow	0
Overflow	0.619	Overflow	0

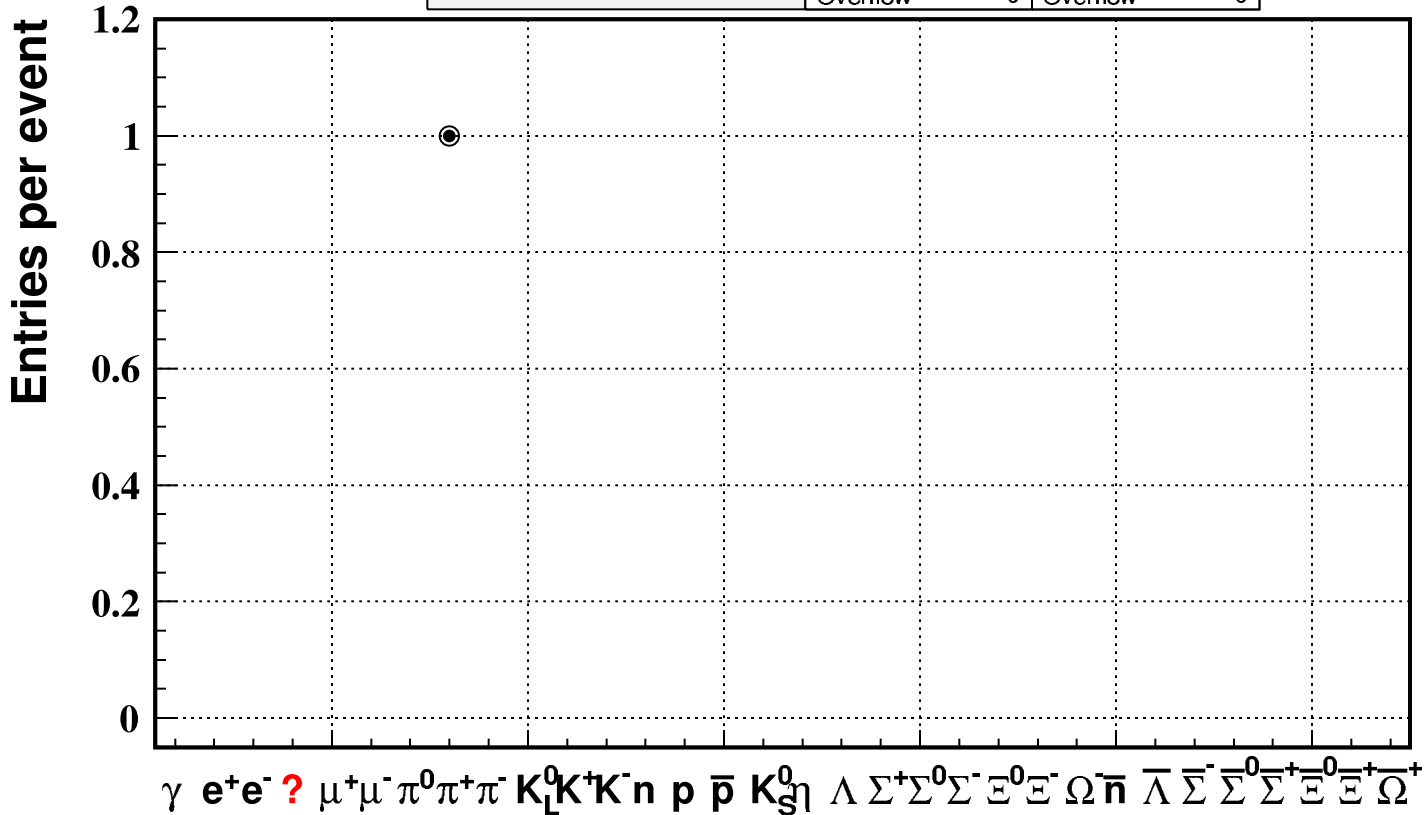


100 GeV Primary π^+
Primary IP

• **GEANT4**

○ **GEANT3**

GEANT4		GEANT3	
Entries	10000	Entries	10000
Mean	8	Mean	8
RMS	0	RMS	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0



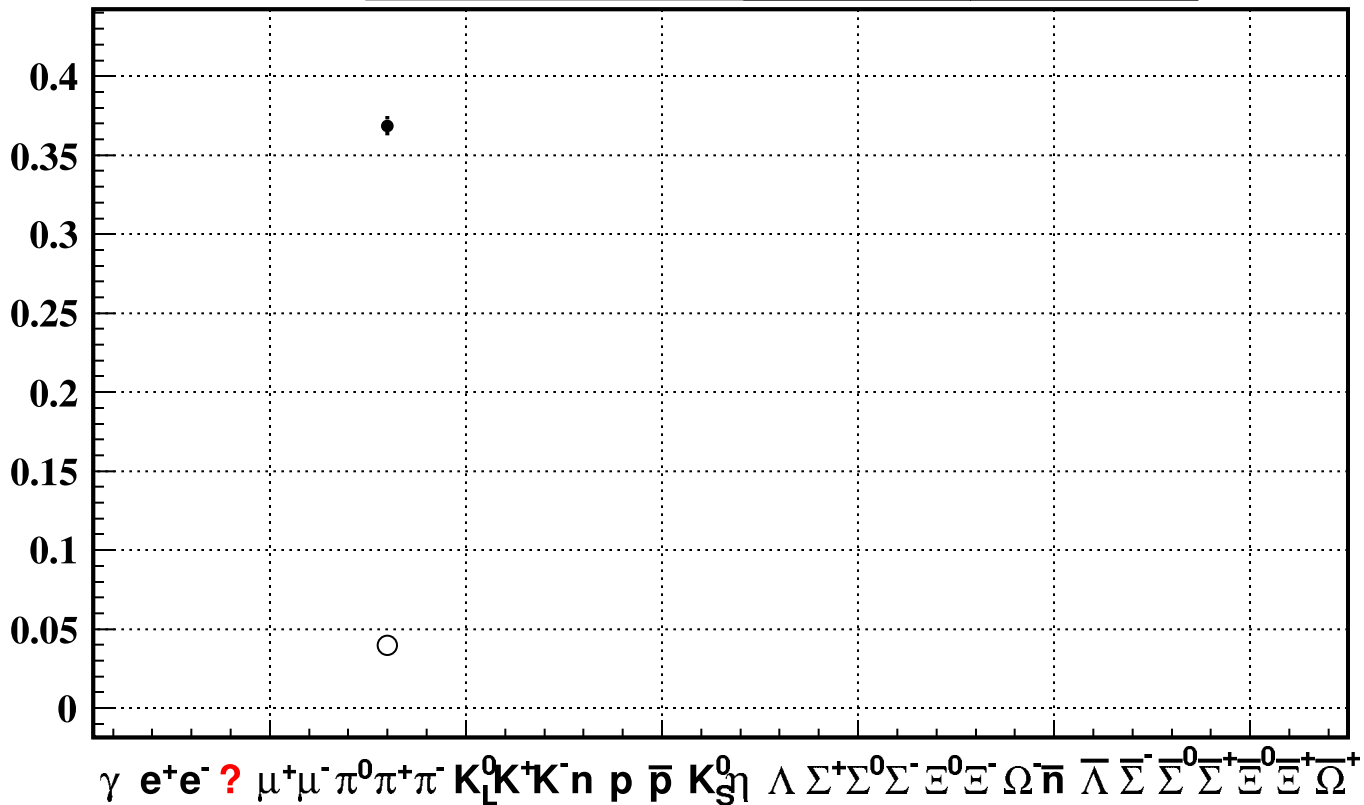
100 GeV Primary π^+
Primary

• **GEANT4**

○ **GEANT3**

	GEANT4		GEANT3	
Entries	3686		Entries	398
Mean	8		Mean	8
RMS	0		RMS	0
Underflow	0		Underflow	0
Overflow	0		Overflow	0

Entries per event

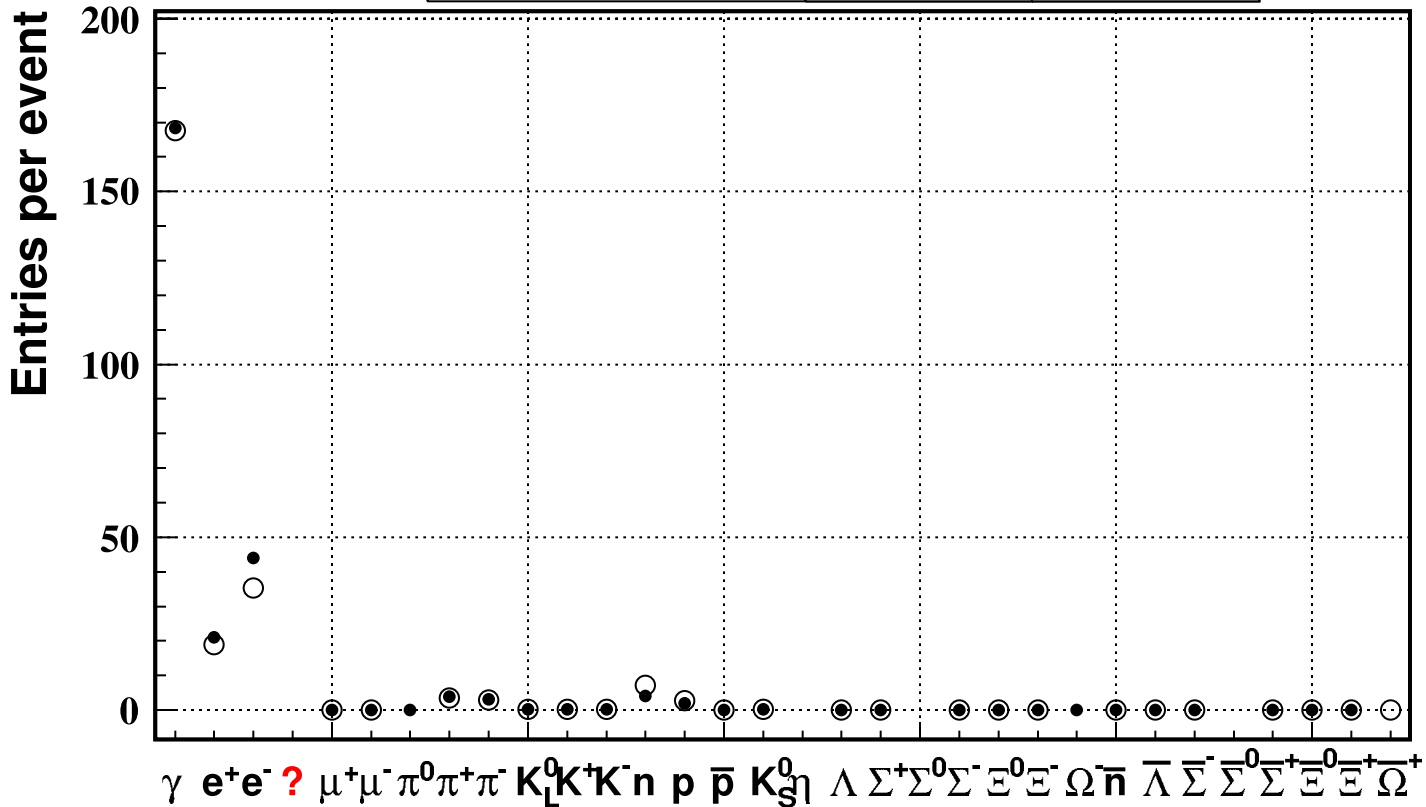


100 GeV Primary π^+
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	2475030	Entries	2392163
Mean	2	Mean	2.13
RMS	2.39	RMS	2.81
Underflow	0.0658	Underflow	0
Overflow	0	Overflow	0.0674

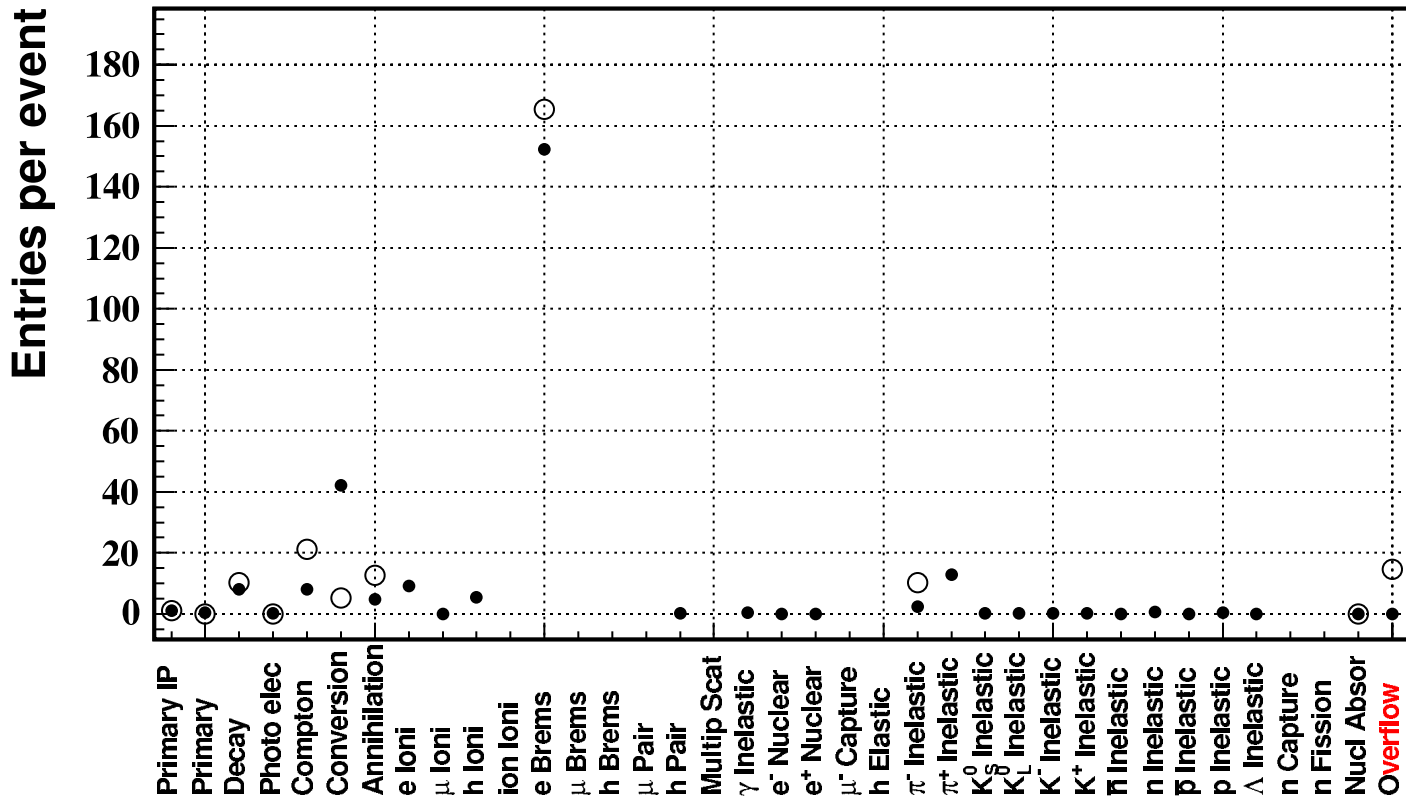


100 GeV Primary π^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	2488716	2402561
Mean	8.99	10.6
RMS	4.7	7.29
Underflow	0	0
Overflow	0	0



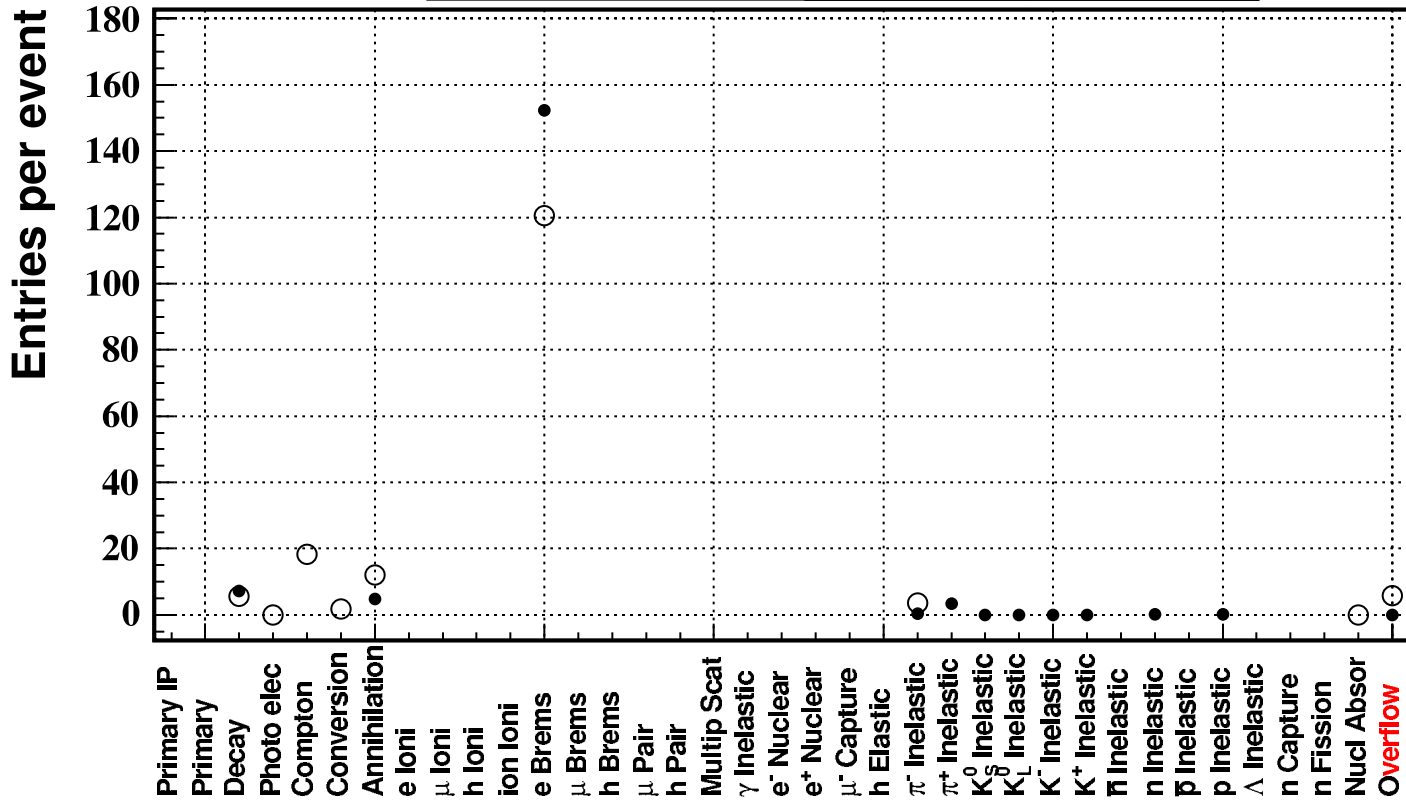
100 GeV Primary π^+

γ

● GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	1684304	1675636
Mean	9.78	9.63
RMS	2.83	5.89
Underflow	0	0
Overflow	0	0

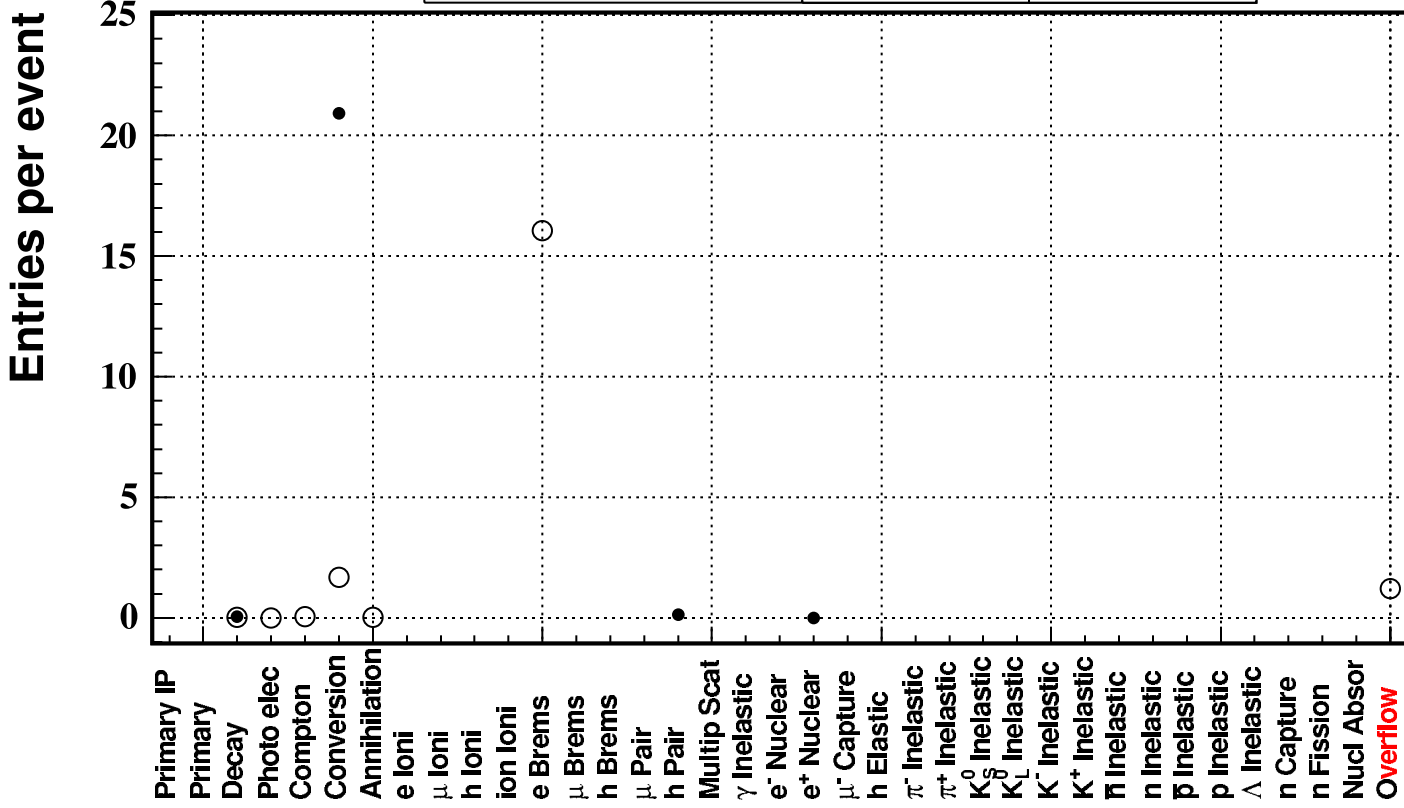


100 GeV Primary π^+
 e^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3	
Entries	211033	Entries	189921
Mean	4.05	Mean	11
RMS	0.812	RMS	6.48
Underflow	0	Underflow	0
Overflow	0	Overflow	0

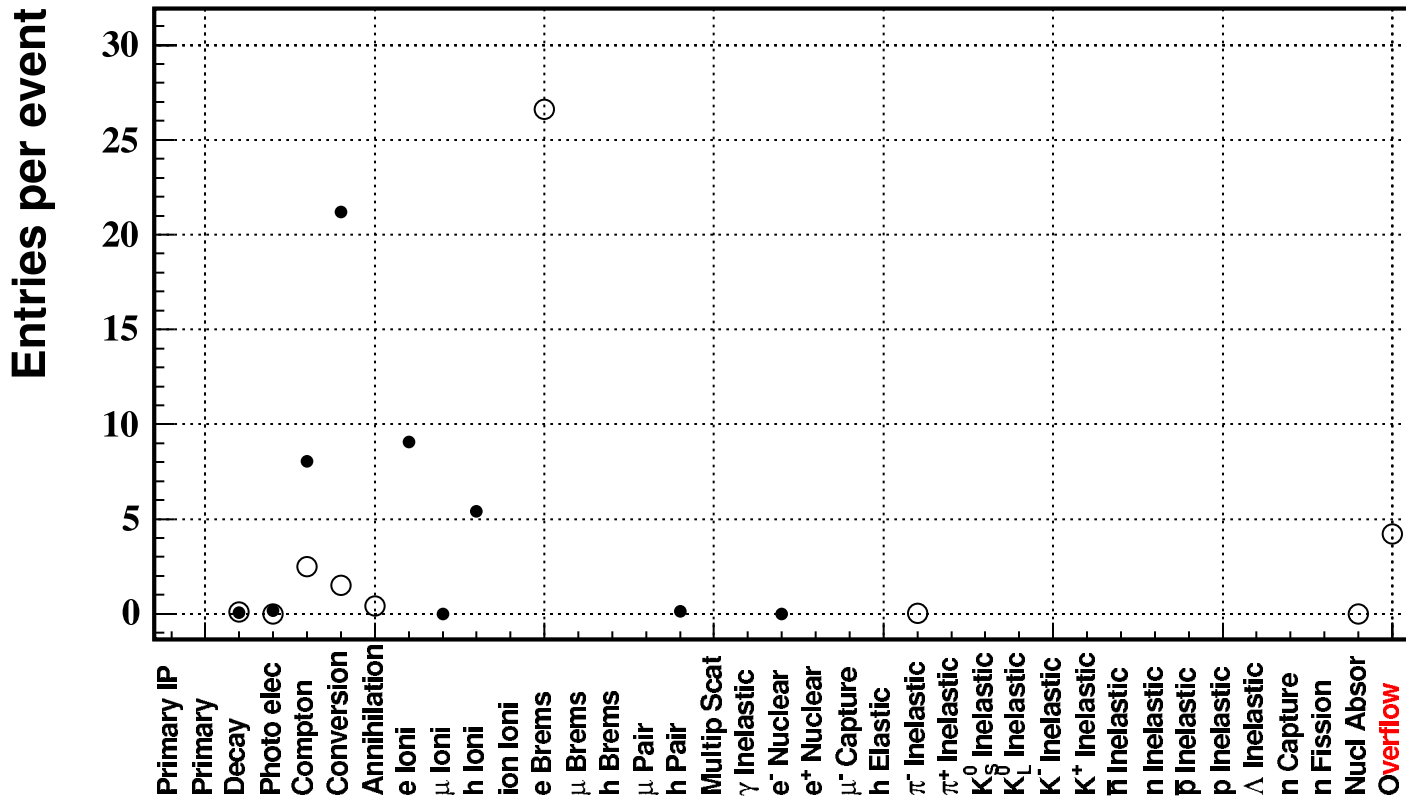


100 GeV Primary π^+
 e^-

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	440552	353463
Mean	4.74	12.1
RMS	1.66	8.68
Underflow	0	0
Overflow	0	0



100 GeV Primary π^+

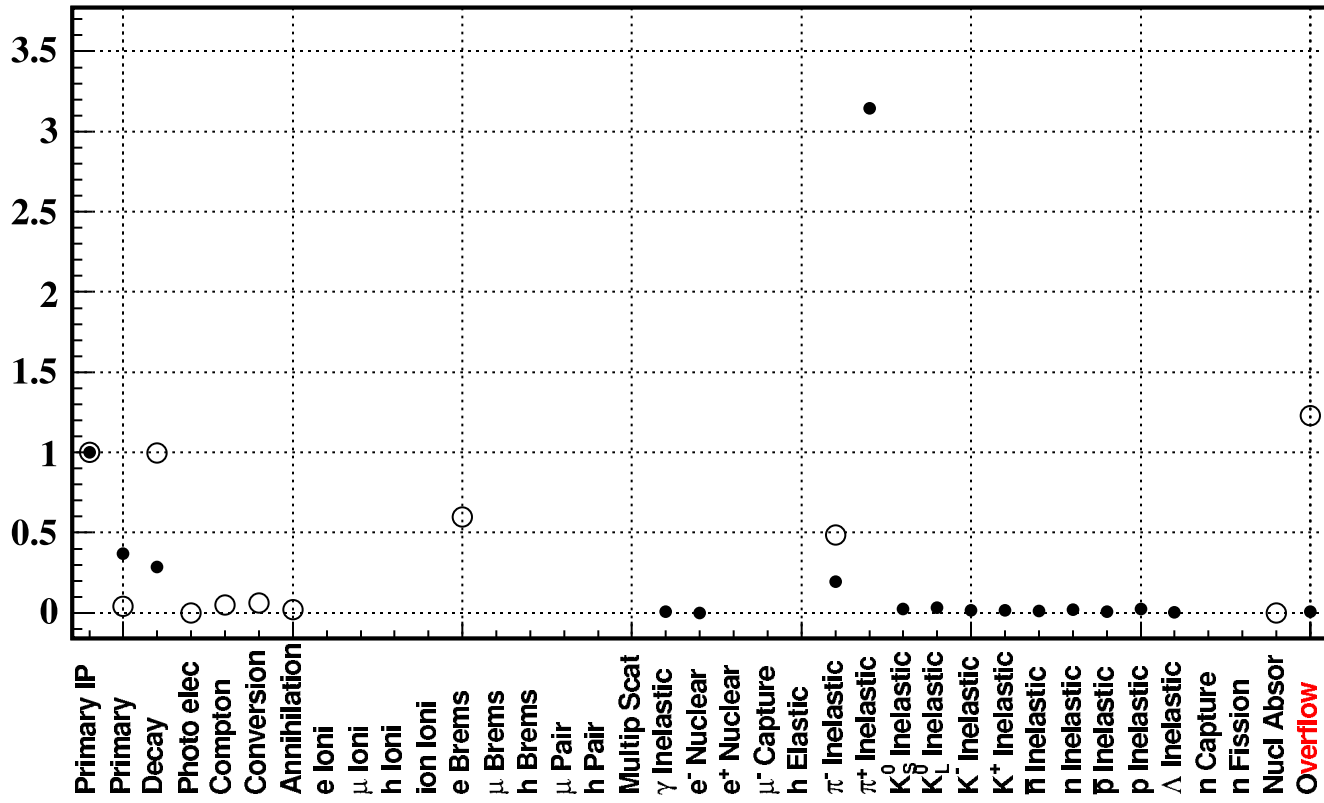
π^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	51623	44789
Mean	14.9	13.4
RMS	10.6	14.9
Underflow	0	0
Overflow	0	0

Entries per event



100 GeV Primary π^+

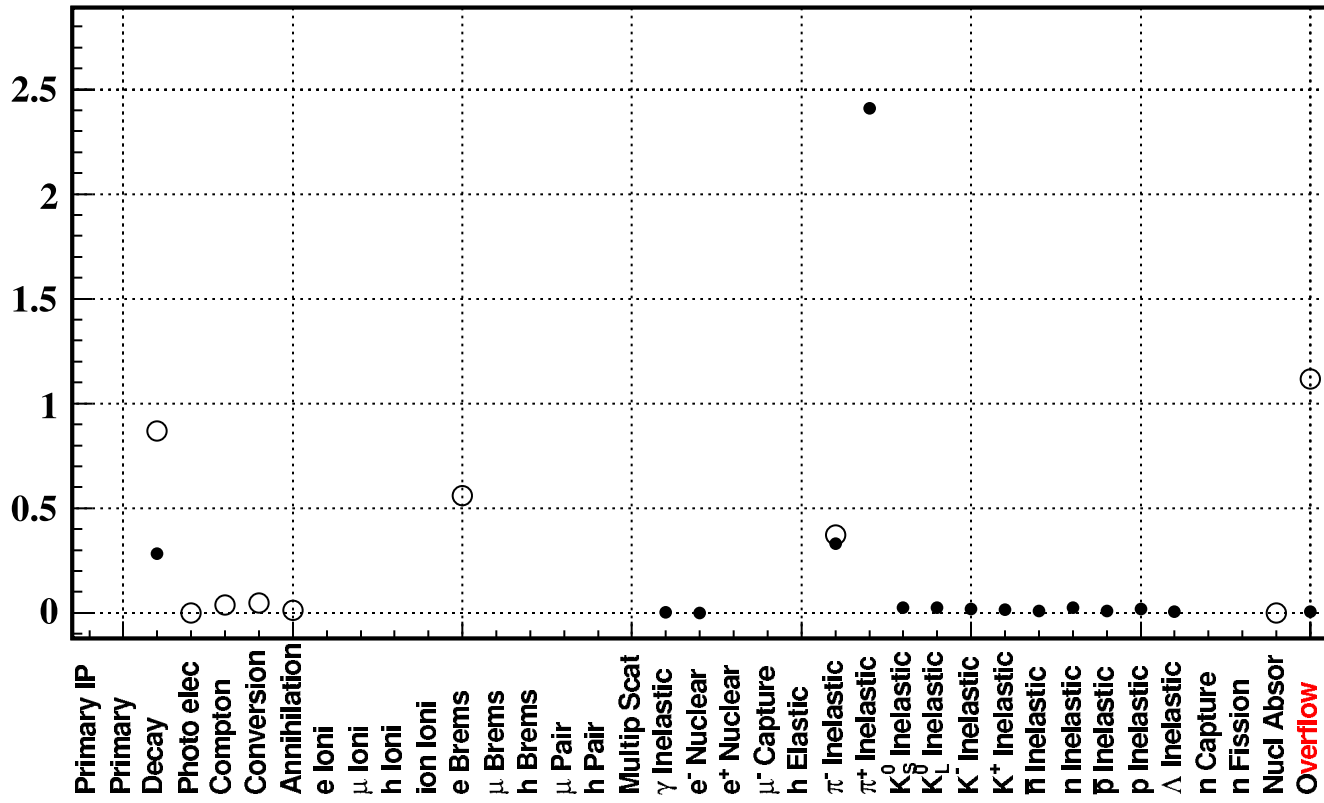
π^-

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	31878	30175
Mean	20.2	17.8
RMS	6.15	14.5
Underflow	0	0
Overflow	0	0

Entries per event



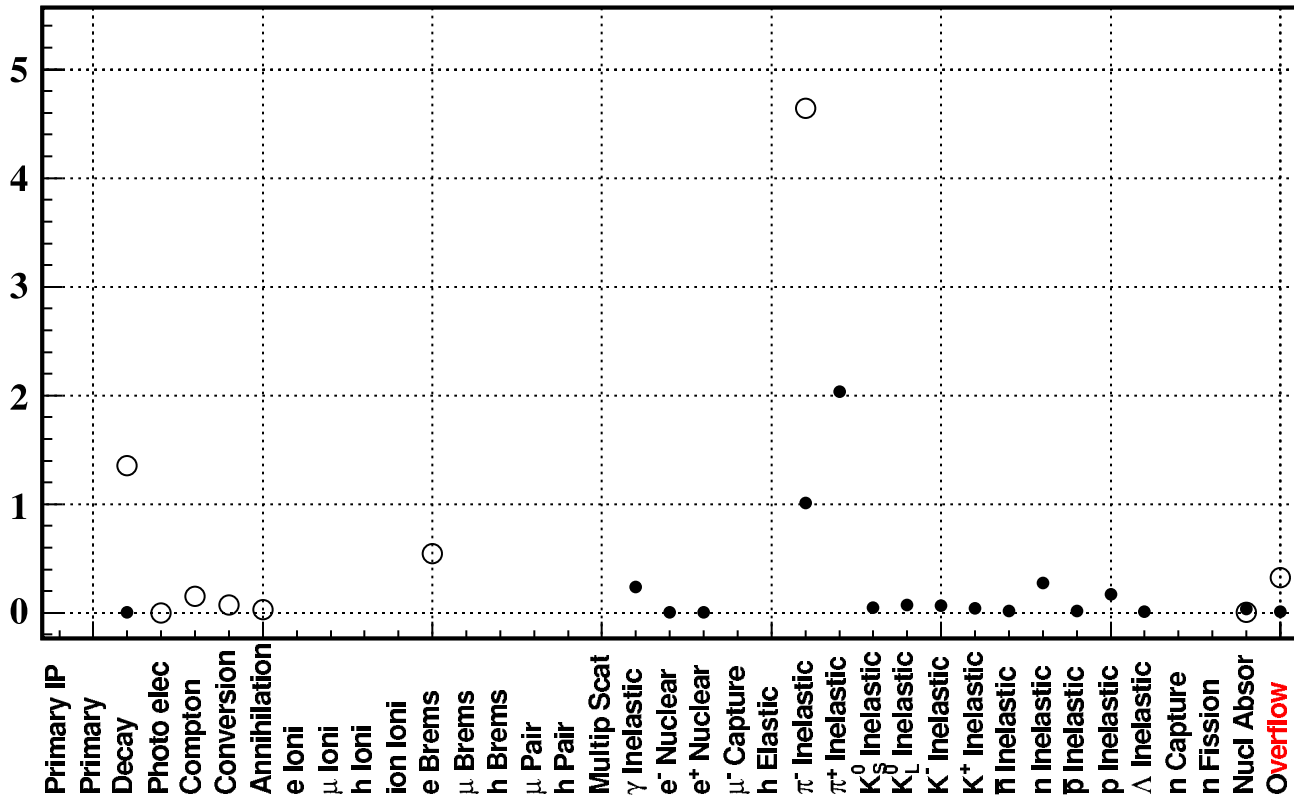
100 GeV Primary π^+
n

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	40626	71220
Mean	22.5	16.4
RMS	3.22	9.15
Underflow	0	0
Overflow	0	0

Entries per event



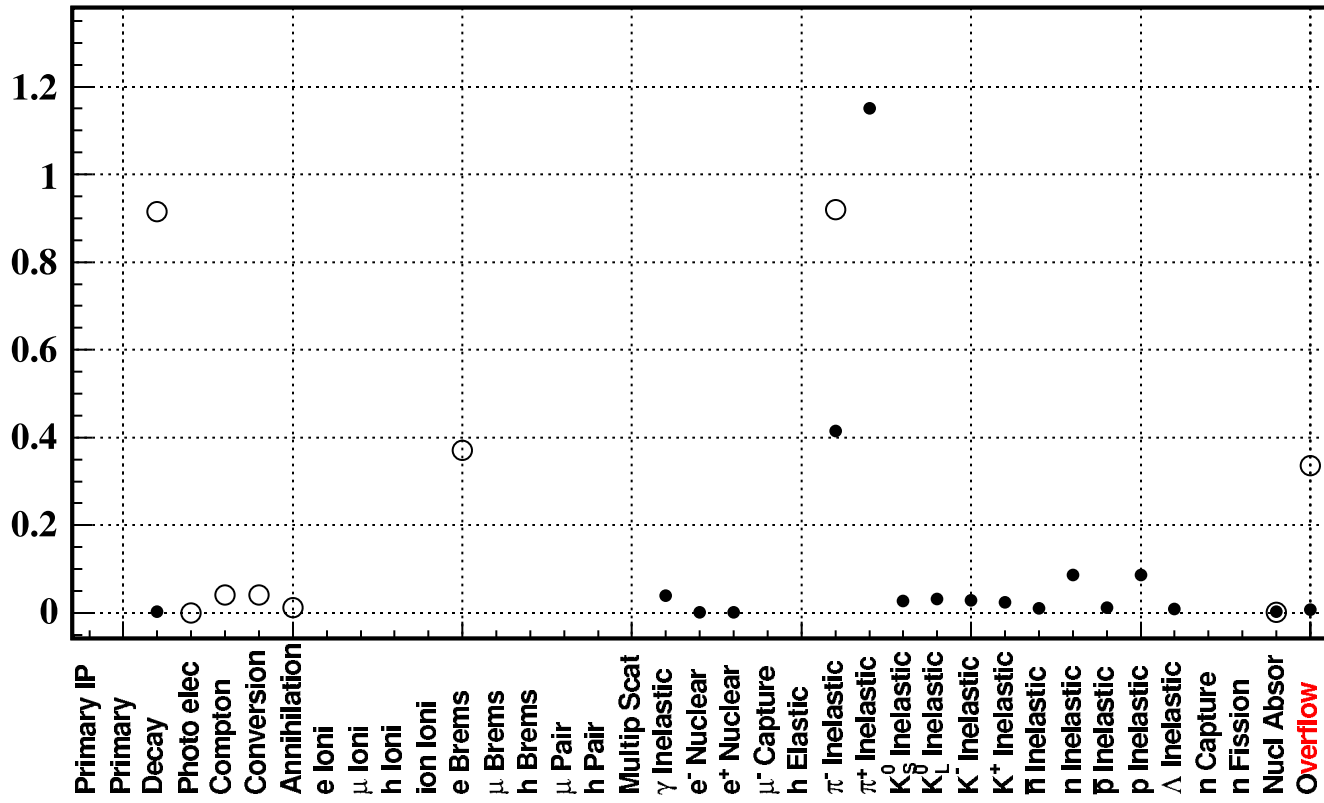
100 GeV Primary π^+
 p

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	19358	26354
Mean	22.6	13.7
RMS	2.84	11.7
Underflow	0	0
Overflow	0	0

Entries per event

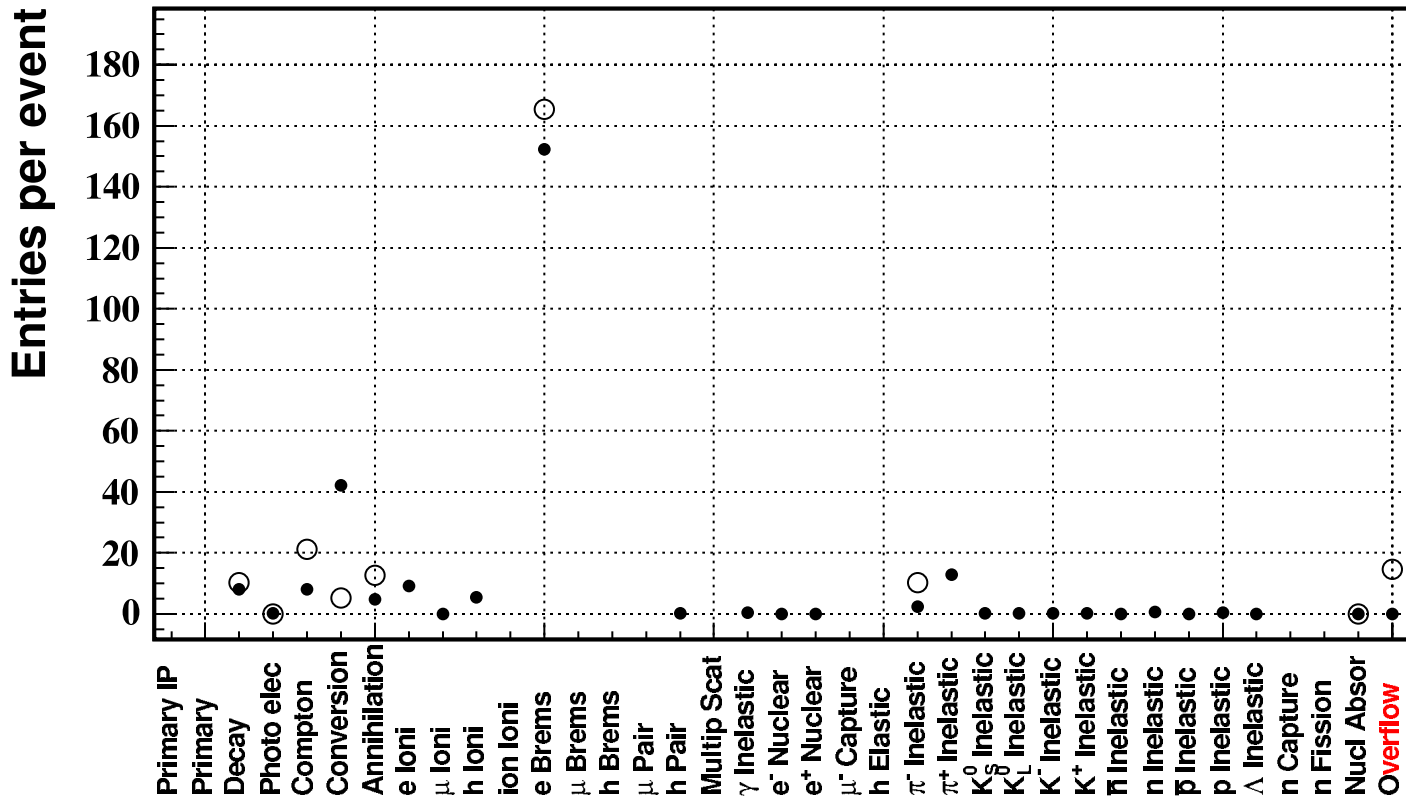


100 GeV Primary π^+
Secondary

● GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	2475030	2392163
Mean	9.05	10.6
RMS	4.66	7.27
Underflow	0	0
Overflow	0	0

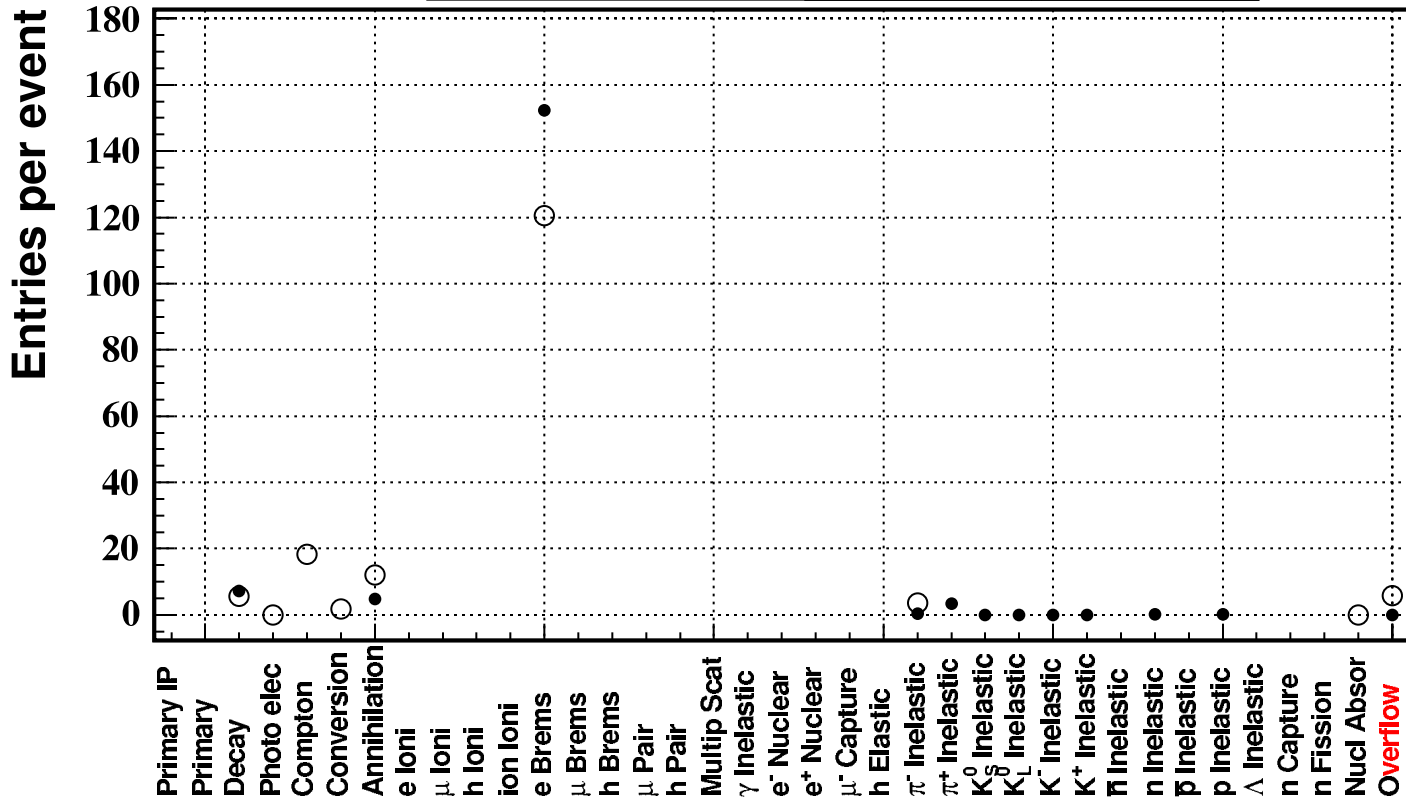


100 GeV Primary π^+
Secondary γ

● GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	1684304	1675636
Mean	9.78	9.63
RMS	2.83	5.89
Underflow	0	0
Overflow	0	0

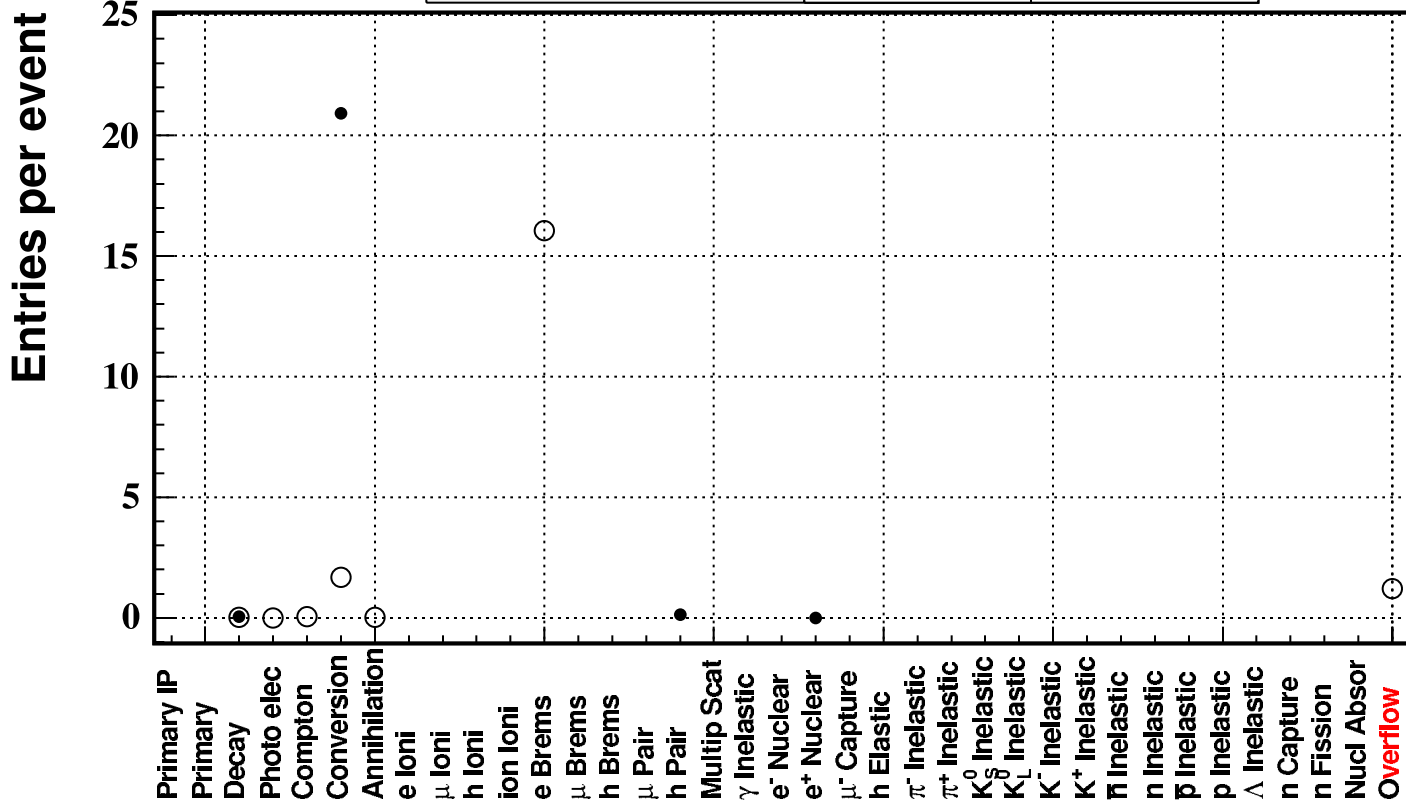


100 GeV Primary π^+
Secondary e^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	211033	189921
Mean	4.05	11
RMS	0.812	6.48
Underflow	0	0
Overflow	0	0

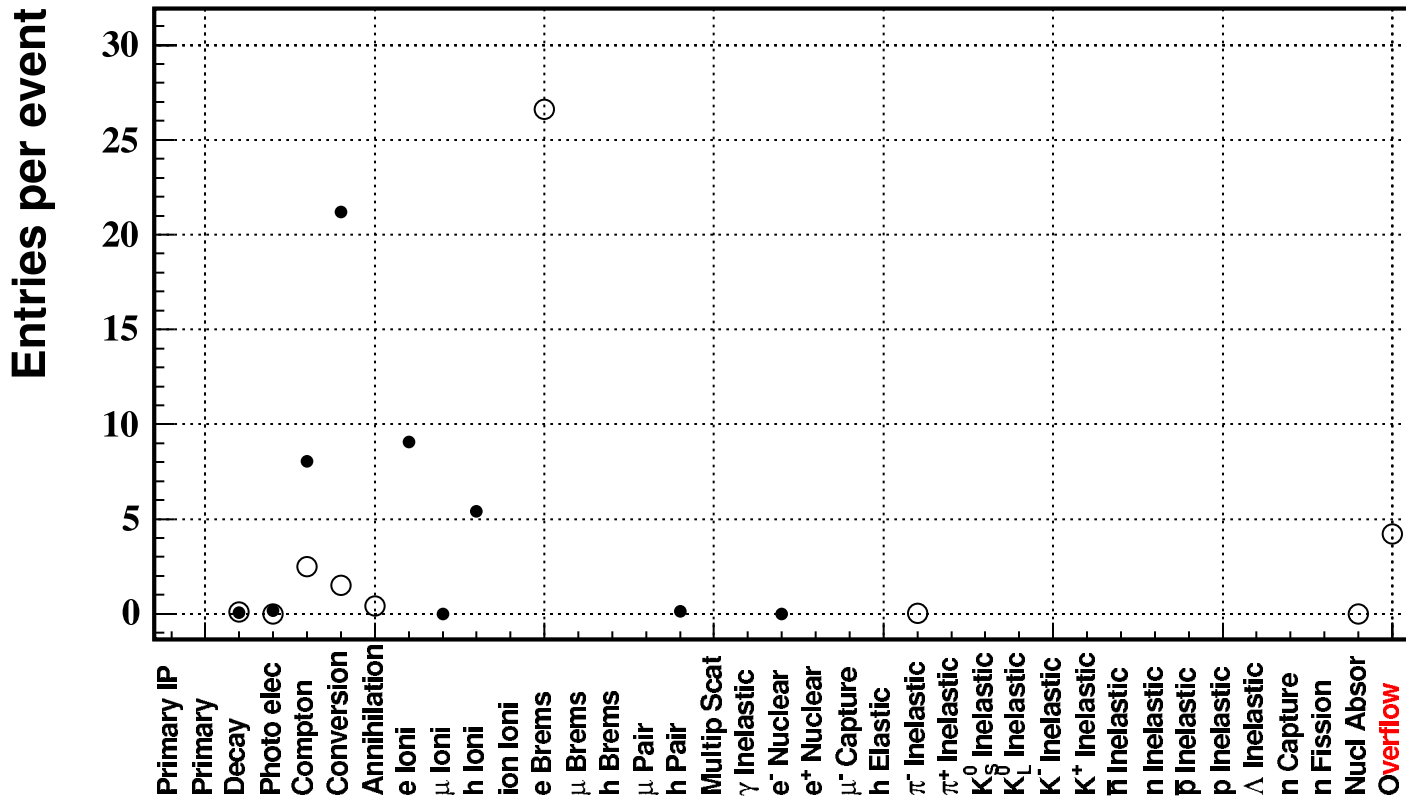


100 GeV Primary π^+
Secondary e^-

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	440552	353463
Mean	4.74	12.1
RMS	1.66	8.68
Underflow	0	0
Overflow	0	0

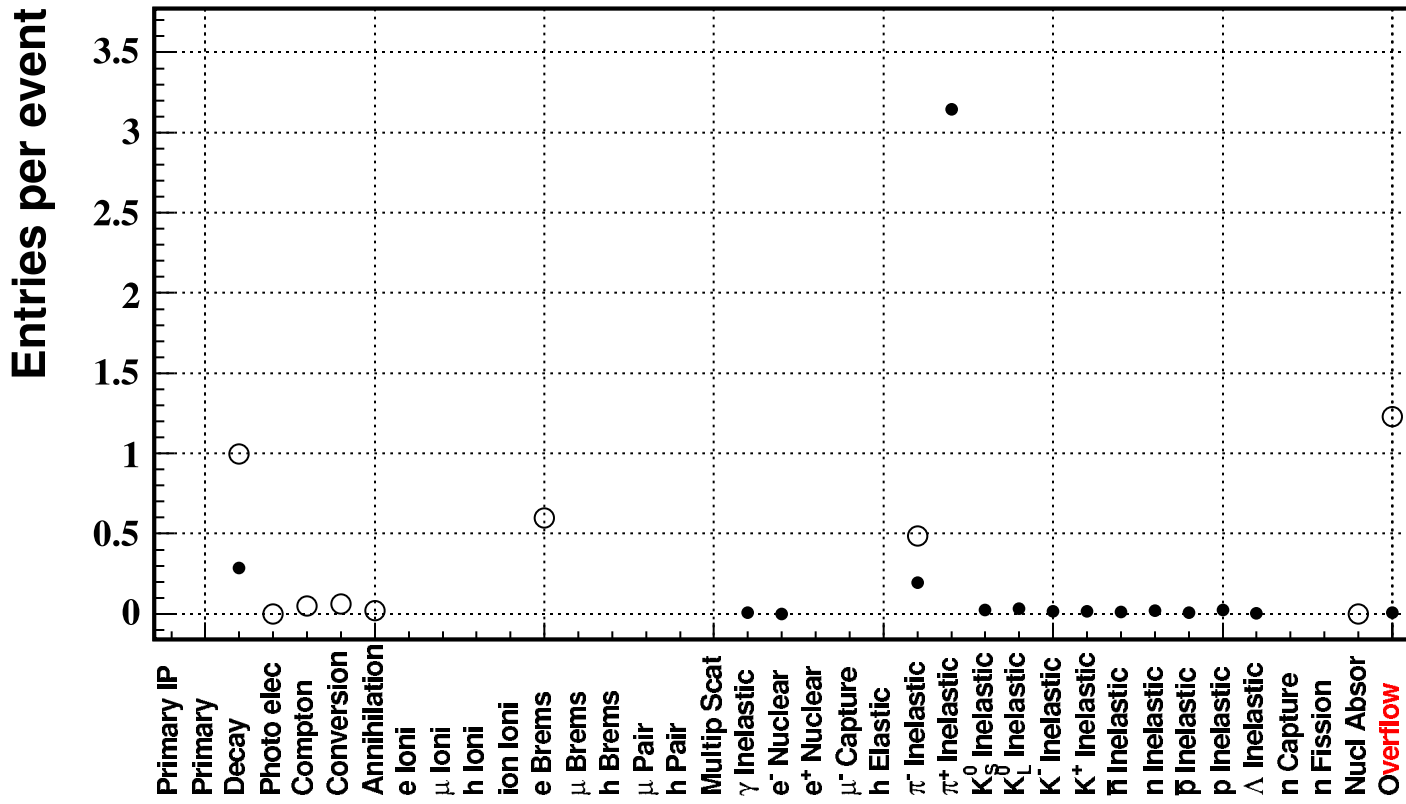


100 GeV Primary π^+
Secondary π^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	37937	34391
Mean	20.6	17.7
RMS	5.71	14.4
Underflow	0	0
Overflow	0	0



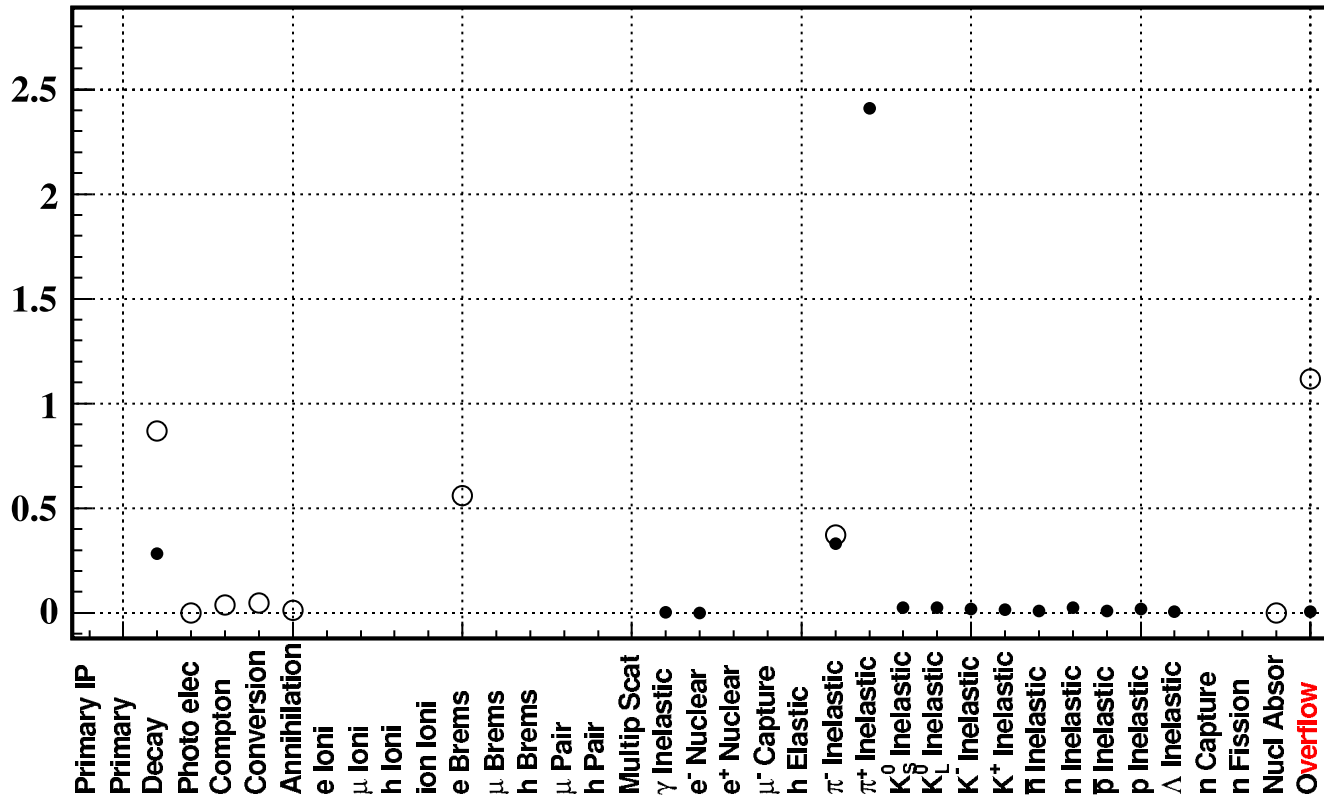
100 GeV Primary π^+
Secondary π^-

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	31878	30175
Mean	20.2	17.8
RMS	6.15	14.5
Underflow	0	0
Overflow	0	0

Entries per event



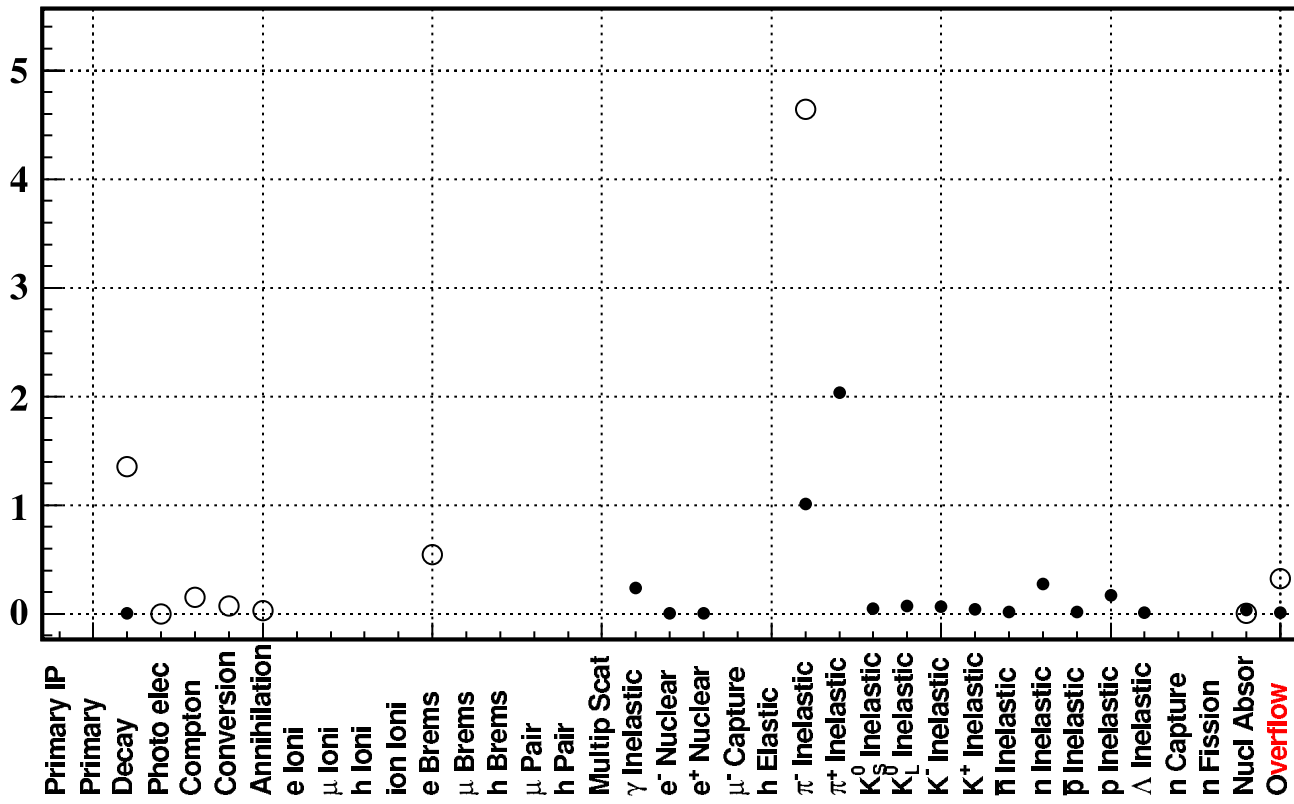
100 GeV Primary π^+
Secondary n

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	40626	71220
Mean	22.5	16.4
RMS	3.22	9.15
Underflow	0	0
Overflow	0	0

Entries per event



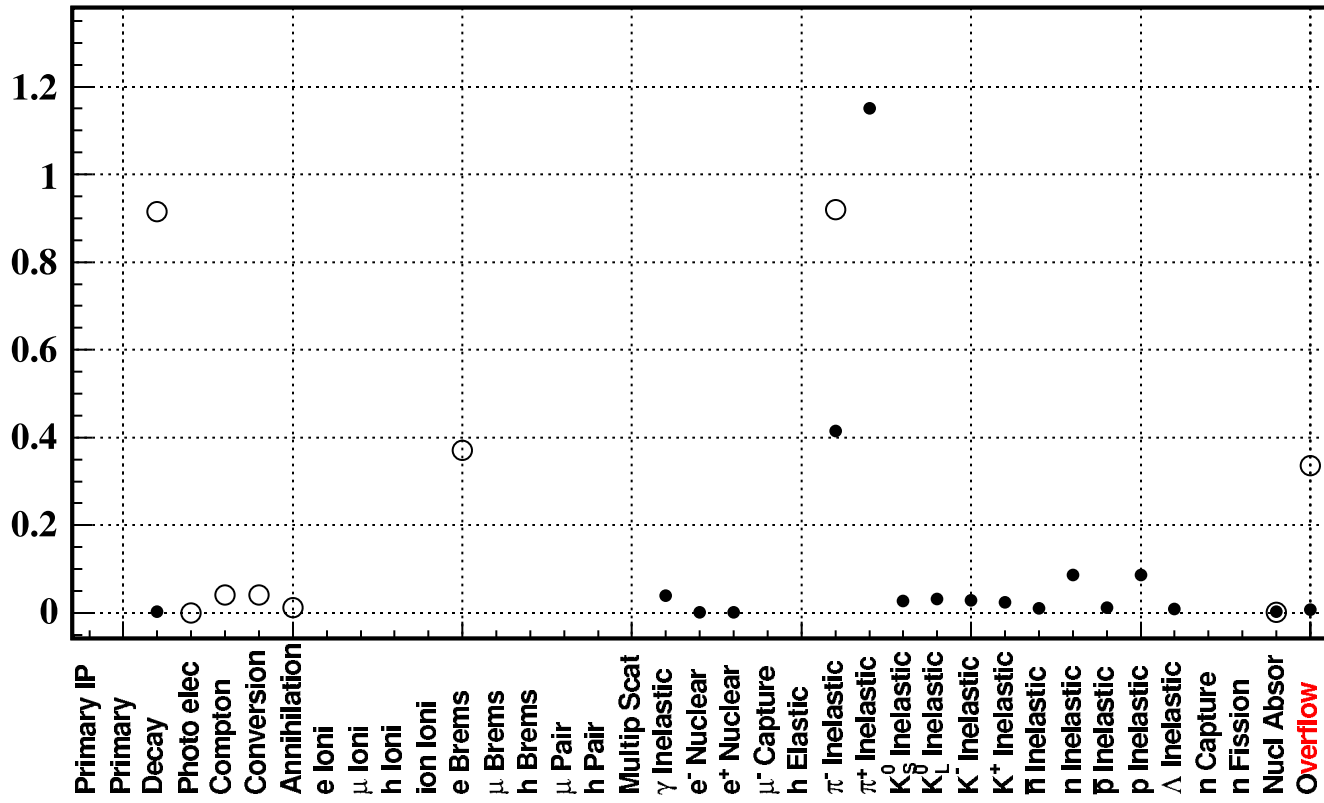
100 GeV Primary π^+
Secondary p

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	19358	26354
Mean	22.6	13.7
RMS	2.84	11.7
Underflow	0	0
Overflow	0	0

Entries per event



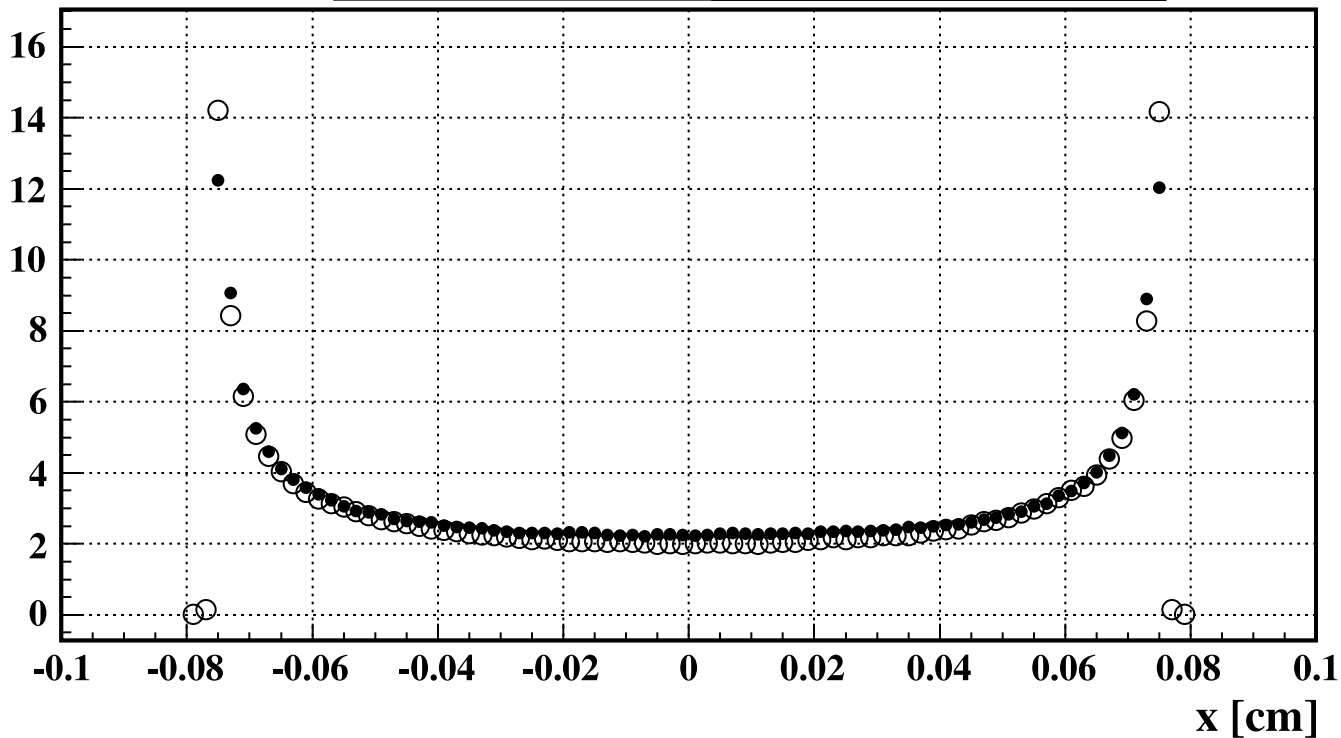
100 GeV Primary π^+
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	2475030	Entries	2392163
Mean	-0.000391	Mean	-0.000244
RMS	0.0522	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0.0001

Entries per event



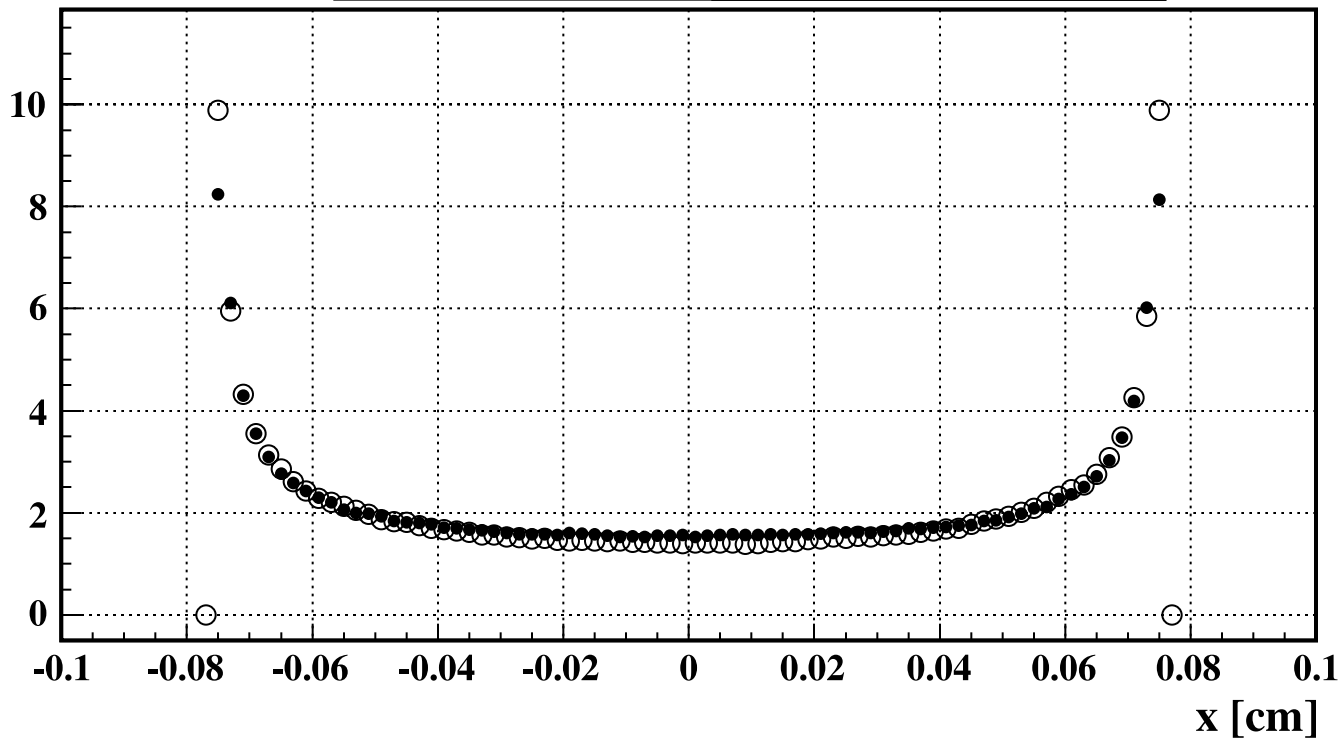
100 GeV Primary π^+
Secondary γ

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	1684304	Entries	1675636
Mean	-0.000367	Mean	-0.000233
RMS	0.0521	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event



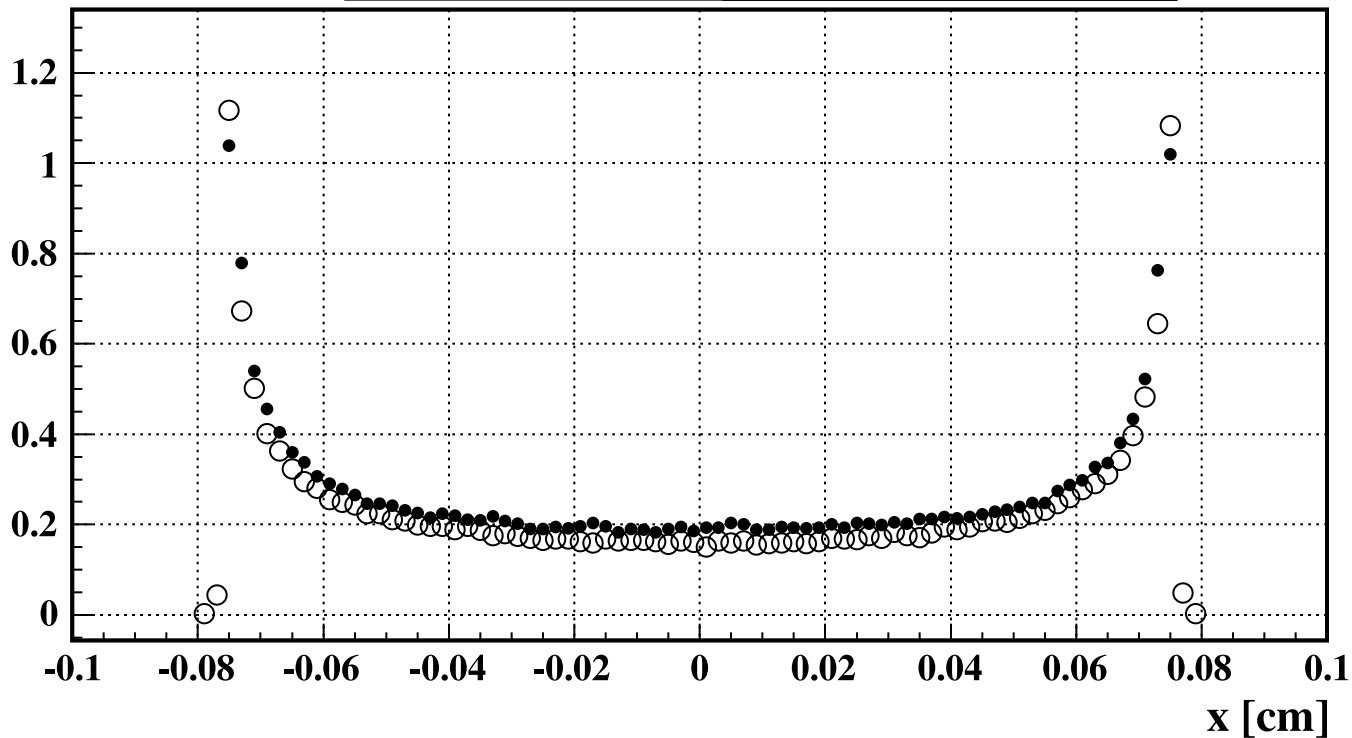
100 GeV Primary π^+
Secondary e^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	211033	Entries	189921
Mean	-0.000572	Mean	-0.000583
RMS	0.0523	RMS	0.0534
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event

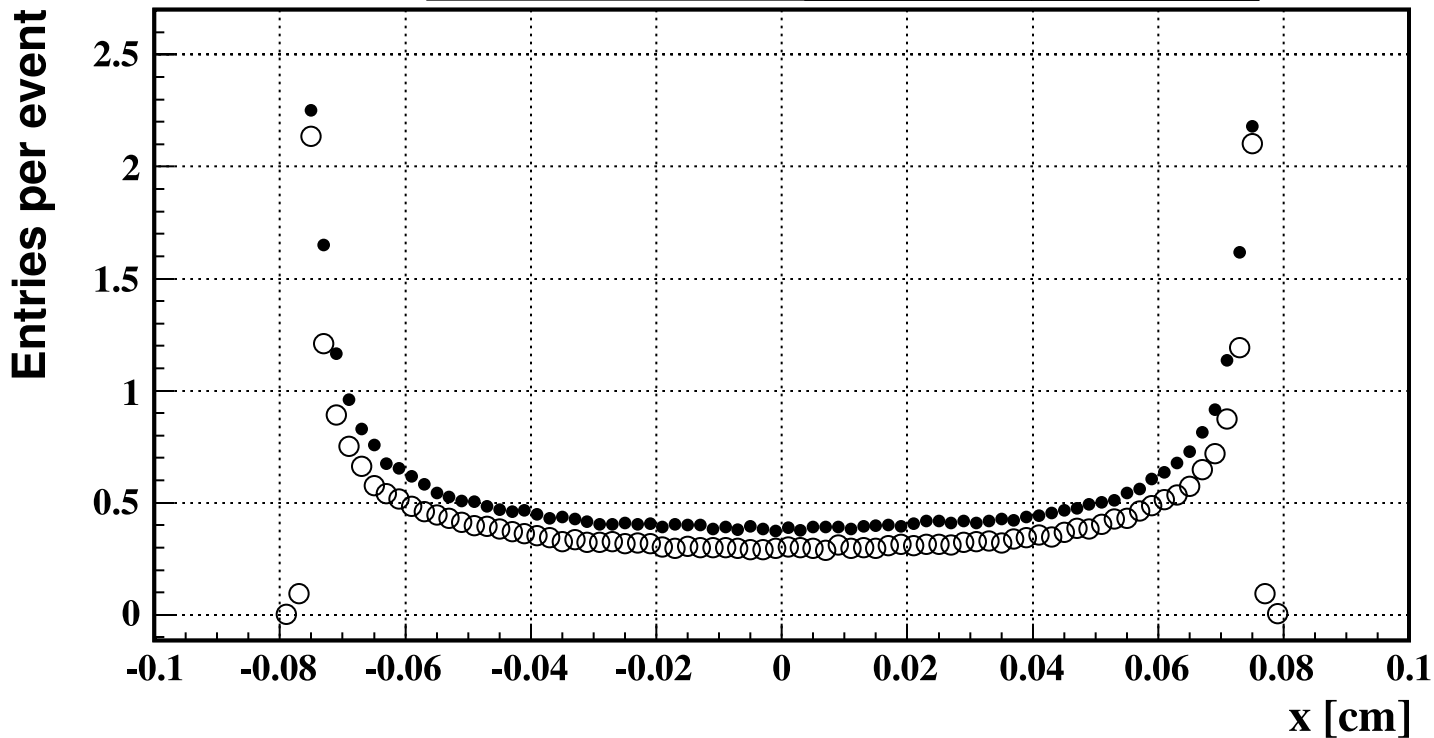


100 GeV Primary π^+
Secondary e^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	440552	Entries	353463
Mean	-0.000508	Mean	-0.000412
RMS	0.0526	RMS	0.0534
Underflow	0	Underflow	0
Overflow	0	Overflow	0.0001

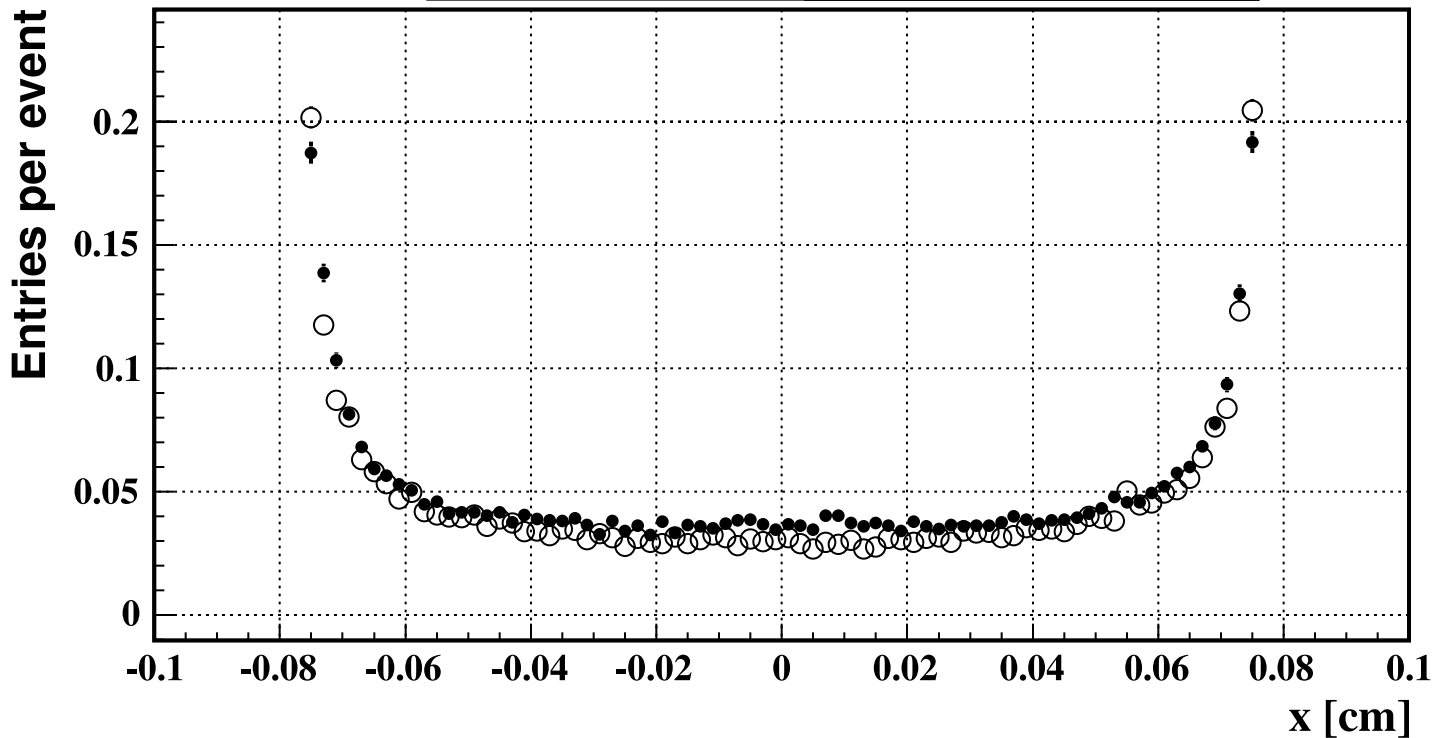


100 GeV Primary π^+
Secondary π^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	37937	Entries	34391
Mean	-0.000248	Mean	-1.77e-05
RMS	0.052	RMS	0.0532
Underflow	0	Underflow	0
Overflow	0	Overflow	0

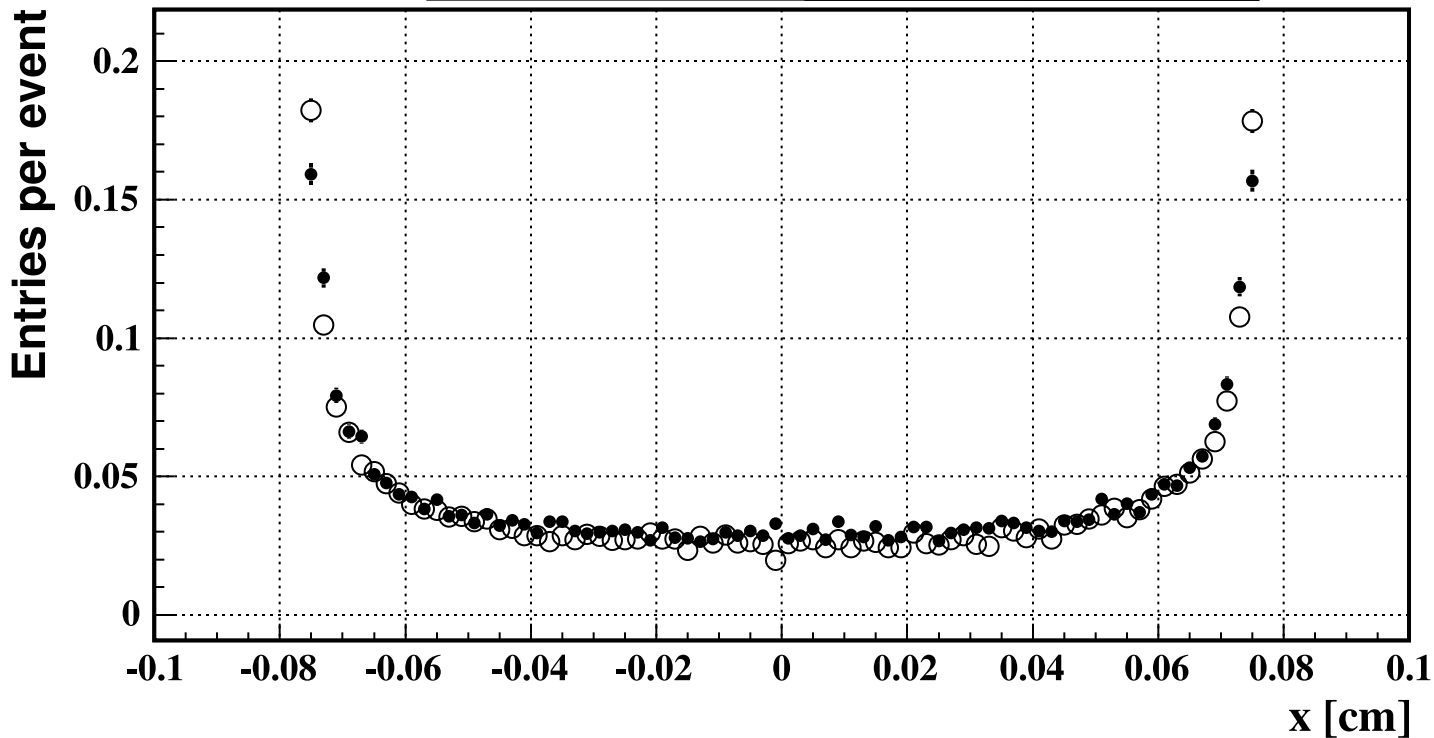


100 GeV Primary π^+
Secondary π^-

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	31878	Entries	30175
Mean	3.22e-05	Mean	1.59e-05
RMS	0.0524	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0

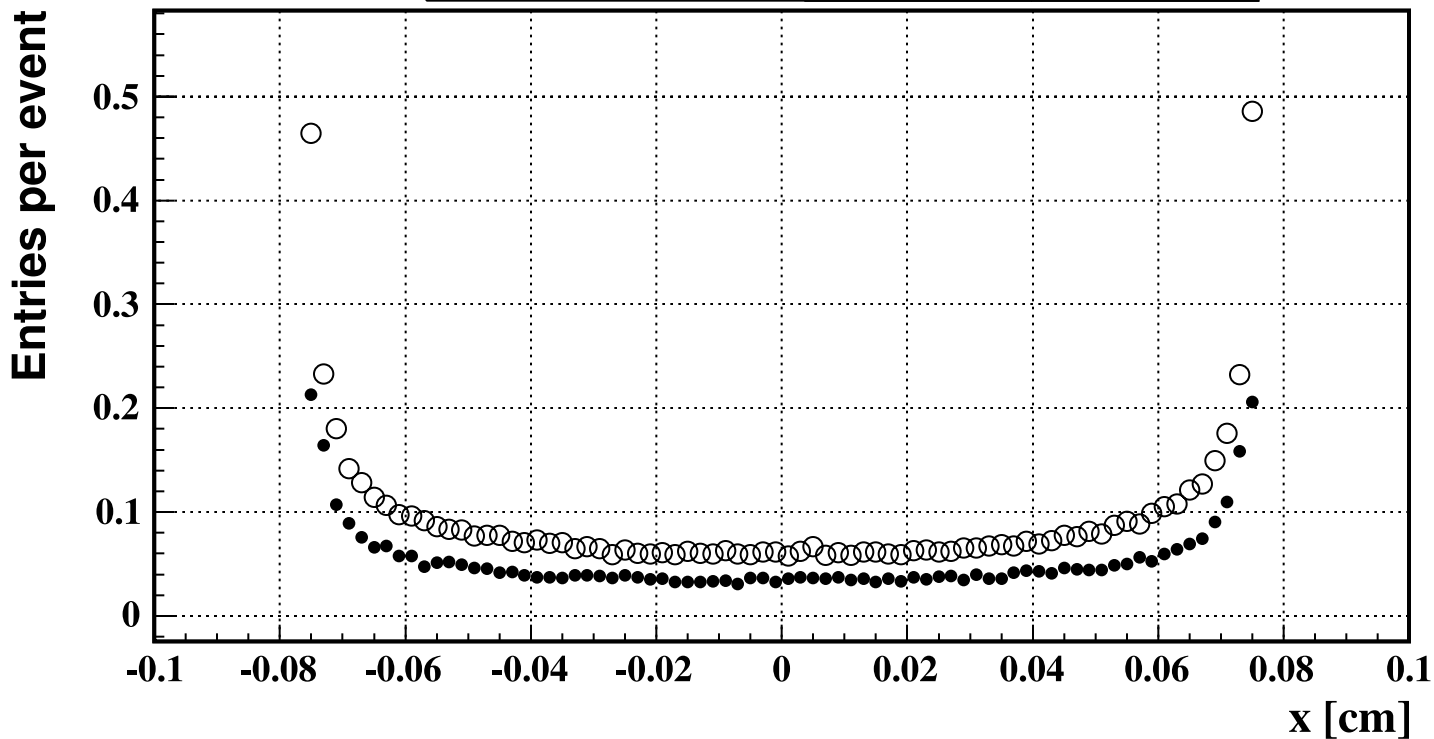


100 GeV Primary π^+
Secondary n

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	40626	Entries	71220
Mean	-0.000119	Mean	0.000441
RMS	0.0531	RMS	0.0535
Underflow	0	Underflow	0
Overflow	0	Overflow	0

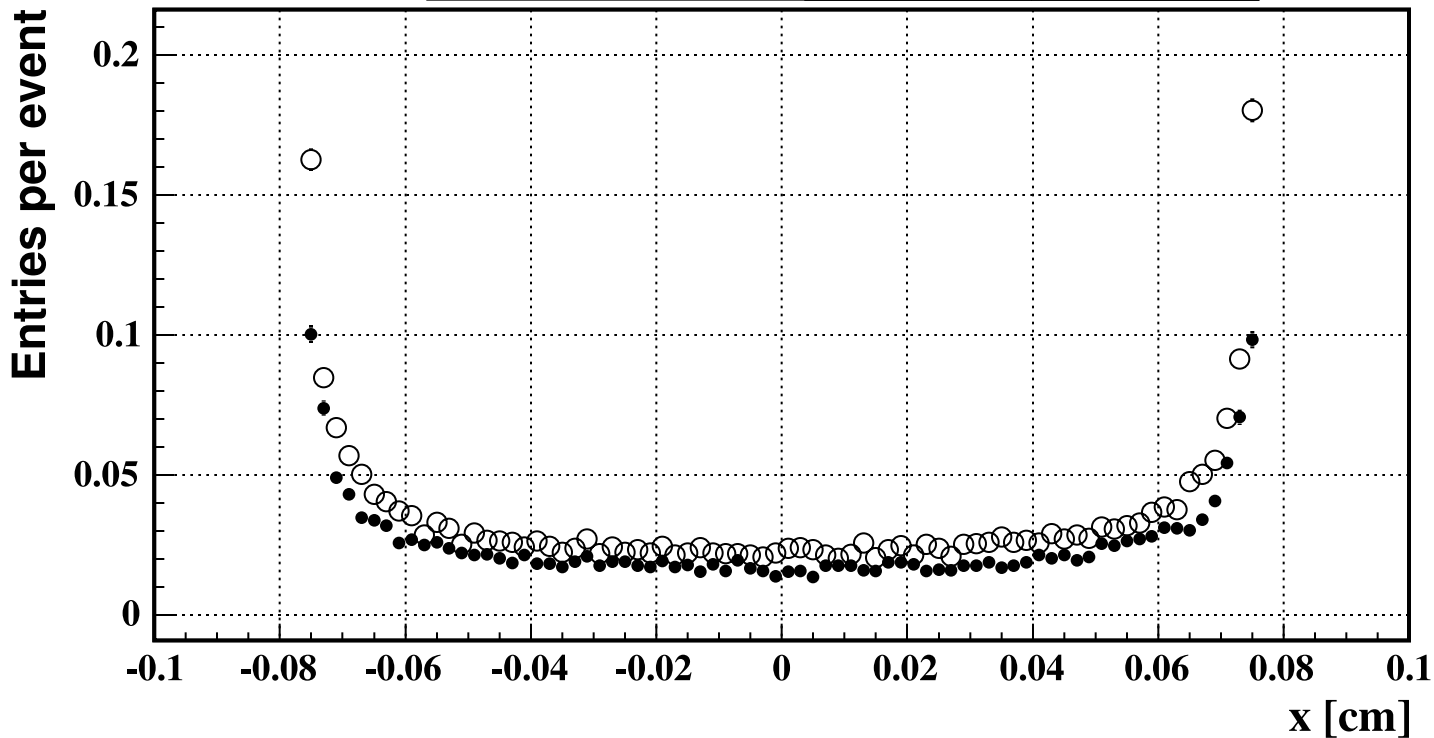


100 GeV Primary π^+
Secondary p

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	19358	26354
Mean	-5.33e-05	0.00124
RMS	0.0529	0.0536
Underflow	0	0
Overflow	0	0



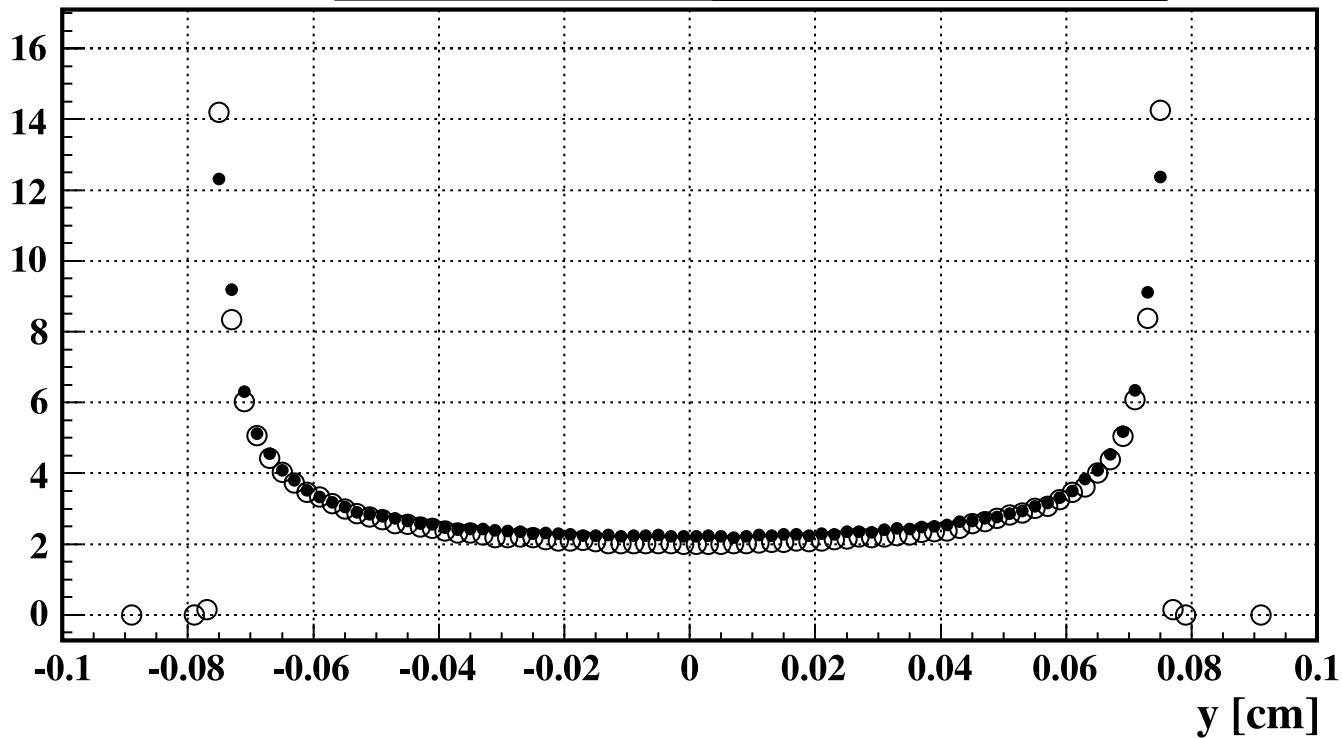
100 GeV Primary π^+
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	2475030	Entries	2392163
Mean	4.62e-05	Mean	-3.08e-05
RMS	0.0524	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event



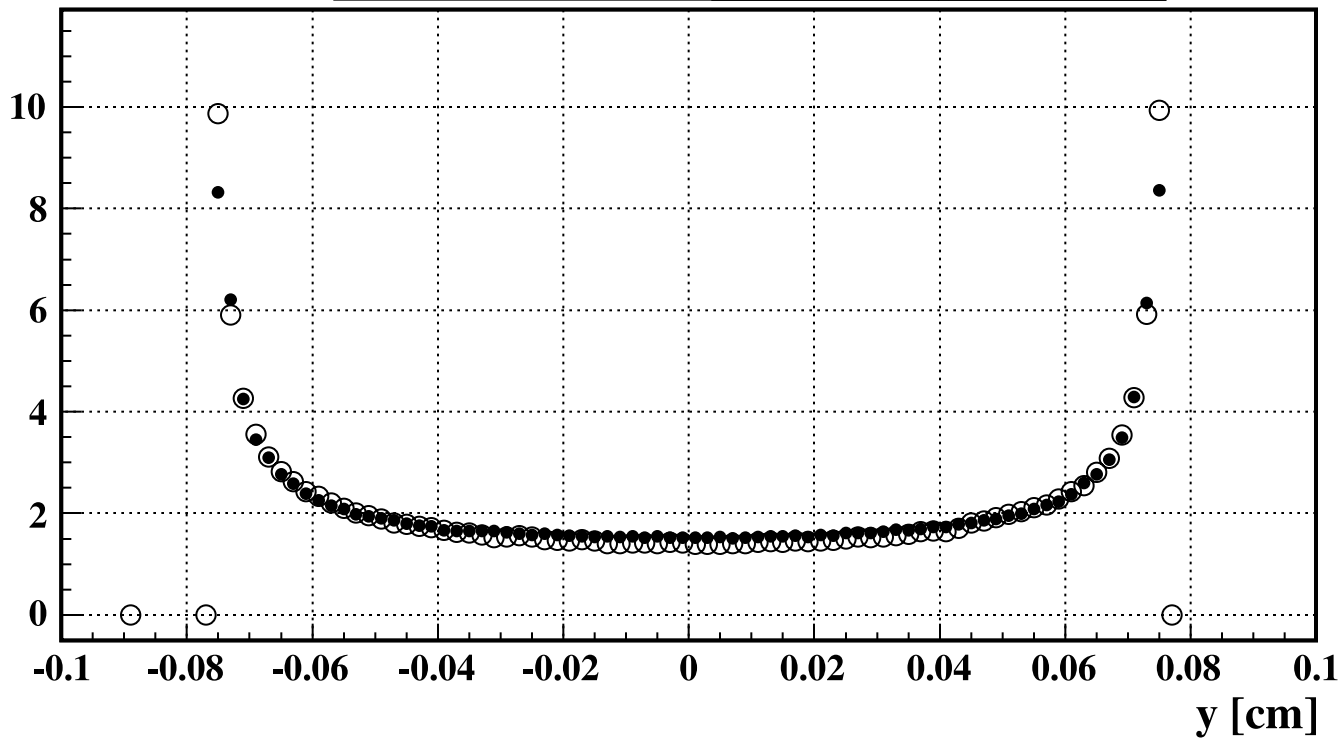
100 GeV Primary π^+
Secondary γ

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	1684304	Entries	1675636
Mean	3.82e-05	Mean	-4.63e-05
RMS	0.0523	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event



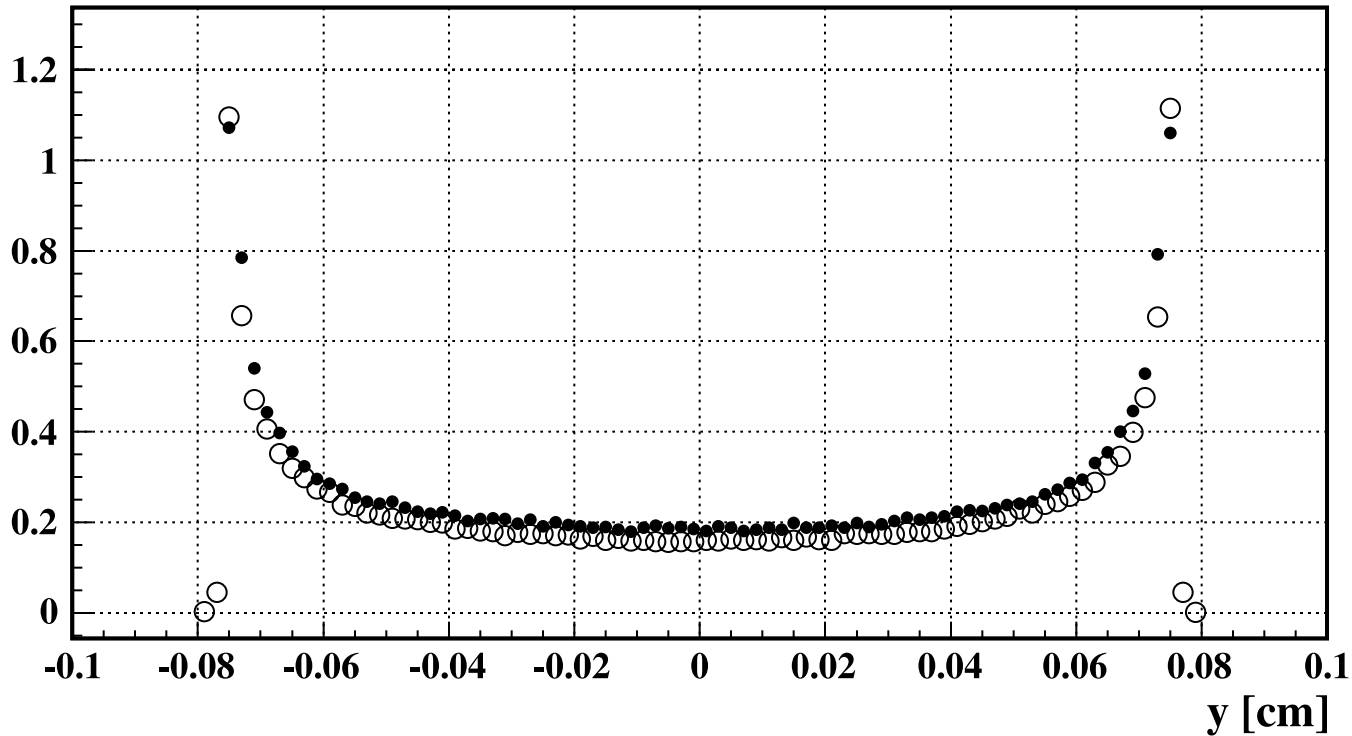
100 GeV Primary π^+
Secondary e^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	211033	Entries	189921
Mean	-2.4e-05	Mean	3.12e-06
RMS	0.0526	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event

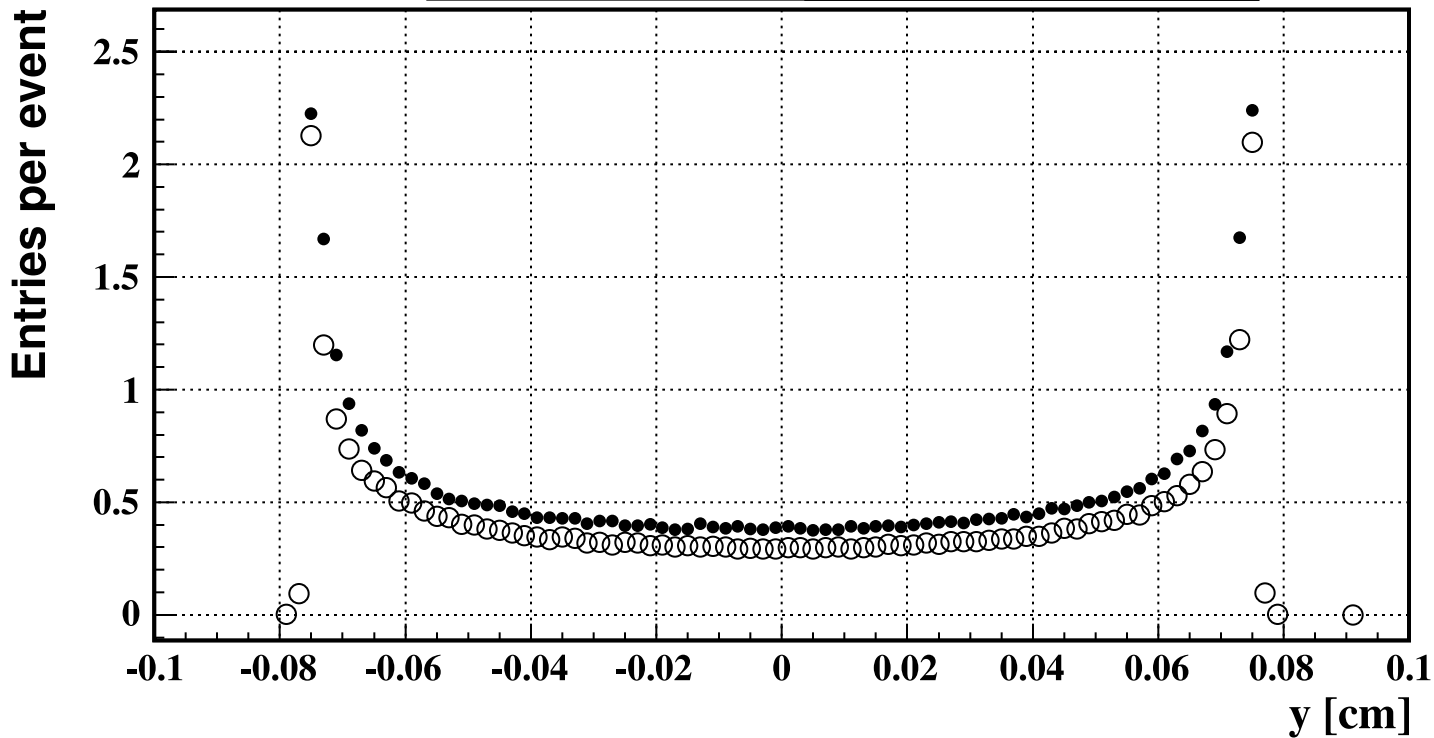


100 GeV Primary π^+
Secondary e^-

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	440552	353463
Mean	6.37e-05	-9.53e-05
RMS	0.0527	0.0534
Underflow	0	0
Overflow	0	0

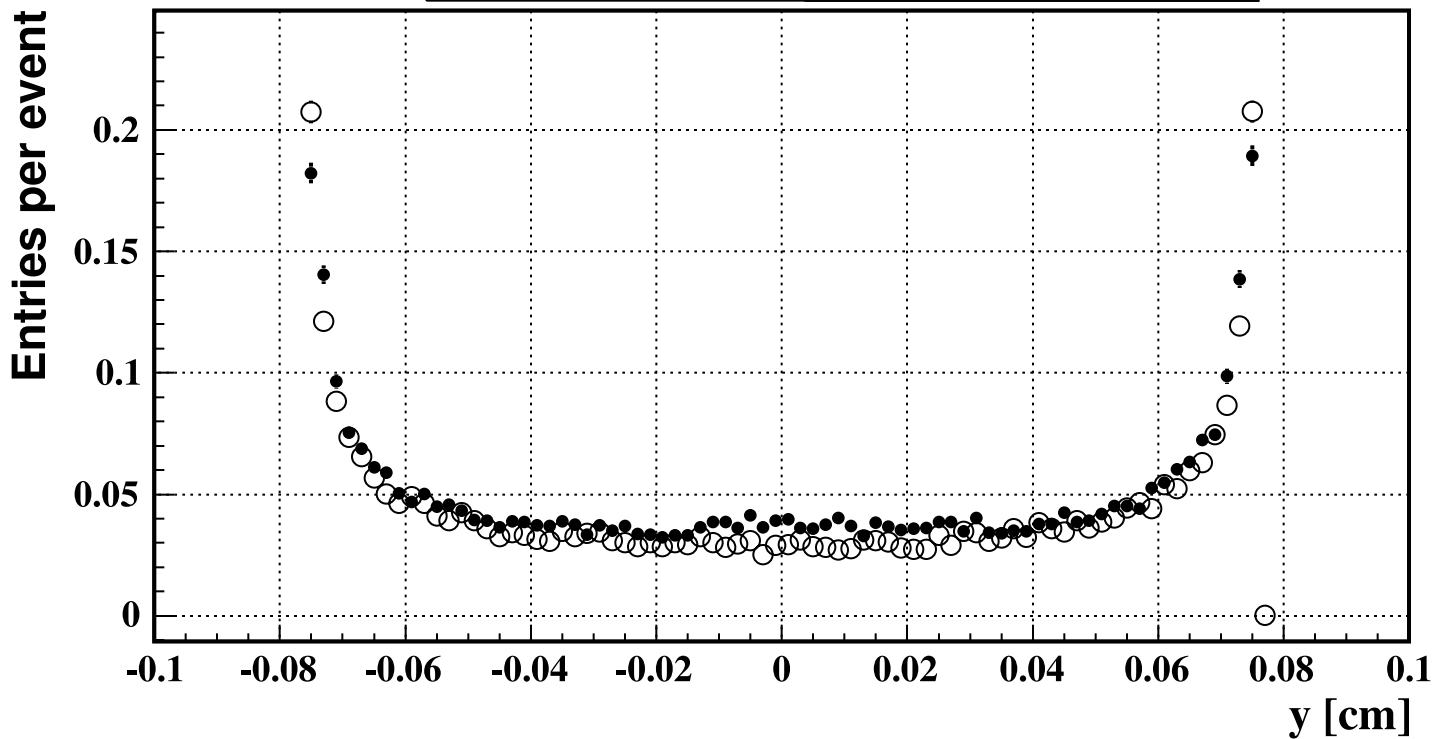


100 GeV Primary π^+
Secondary π^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	37937	Entries	34391
Mean	0.000357	Mean	0.000183
RMS	0.052	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0

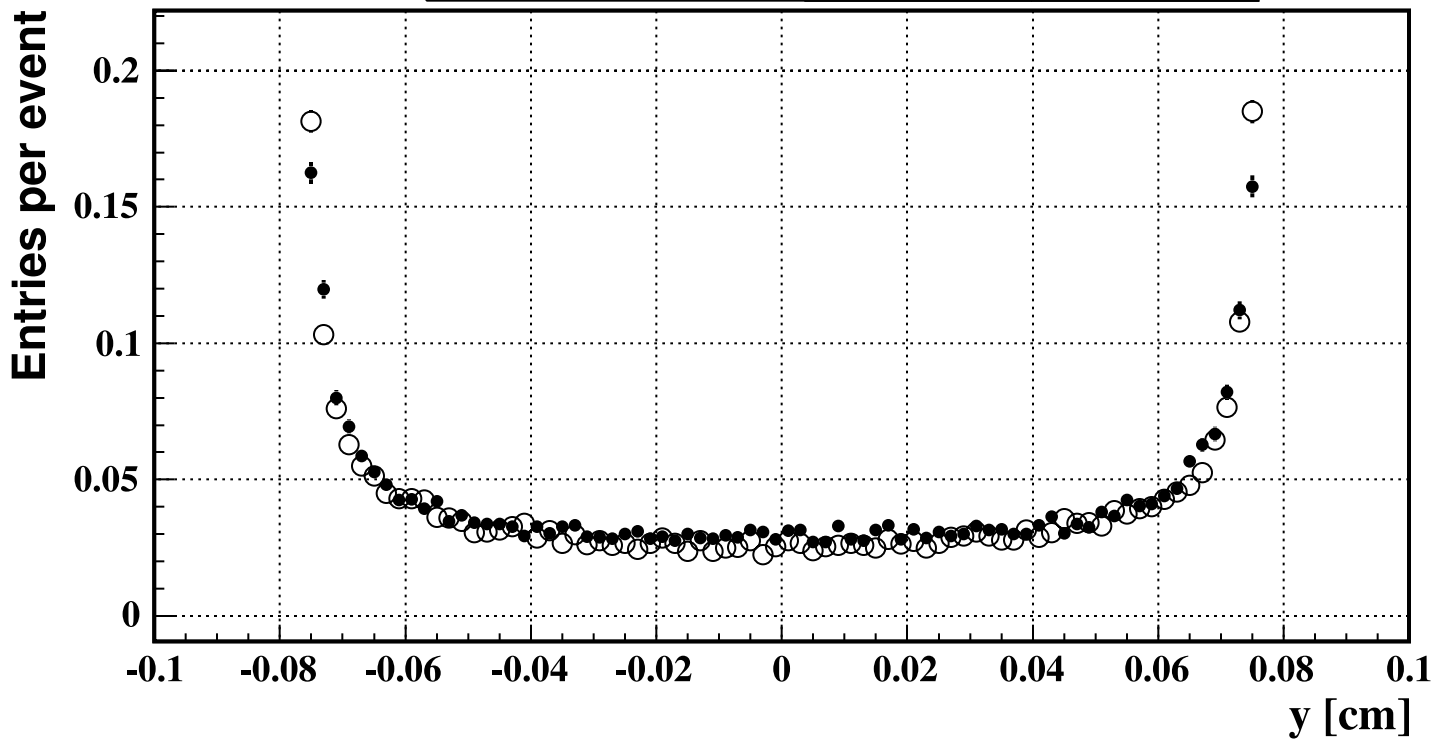


100 GeV Primary π^+
Secondary π^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	31878	Entries	30175
Mean	-3.88e-05	Mean	0.000231
RMS	0.0523	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0

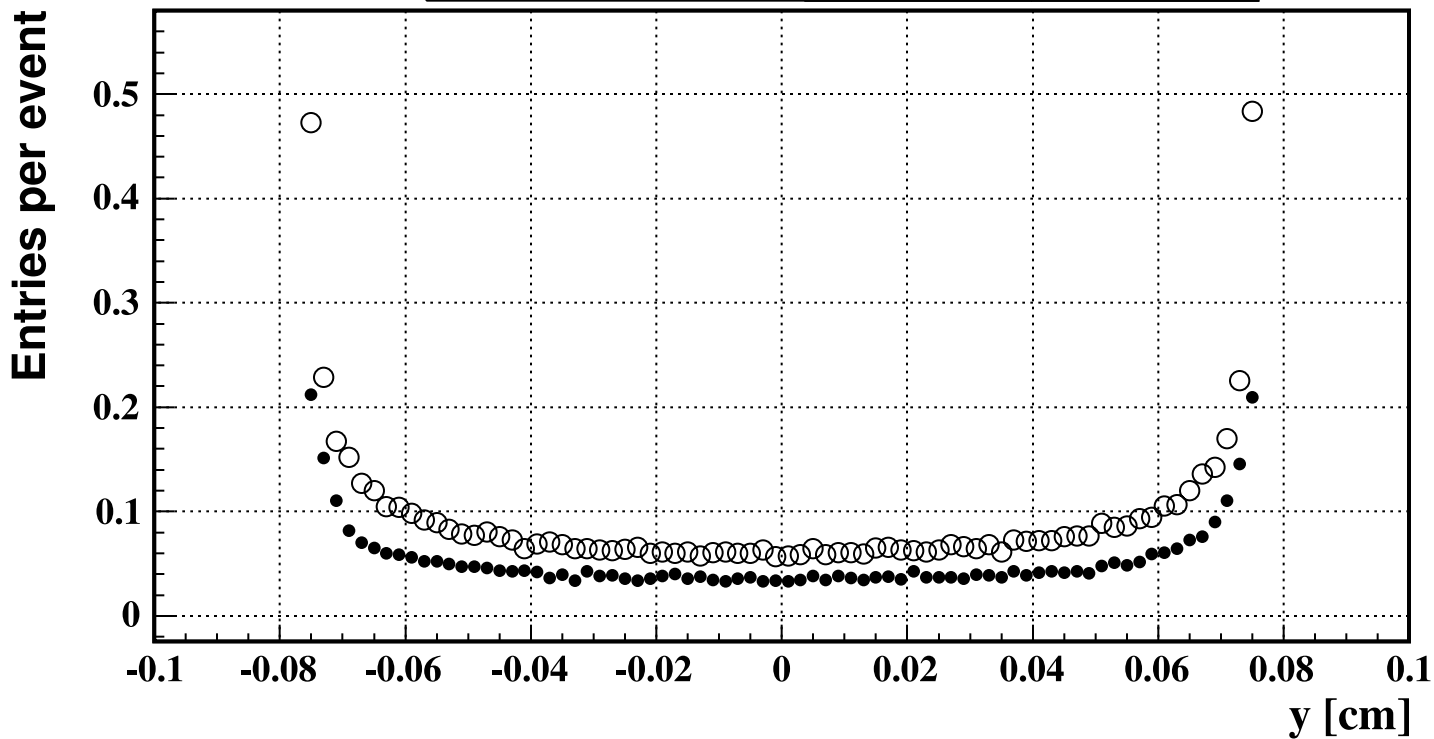


100 GeV Primary π^+
Secondary n

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	40626	Entries	71220
Mean	0.000209	Mean	0.000239
RMS	0.0528	RMS	0.0535
Underflow	0	Underflow	0
Overflow	0	Overflow	0

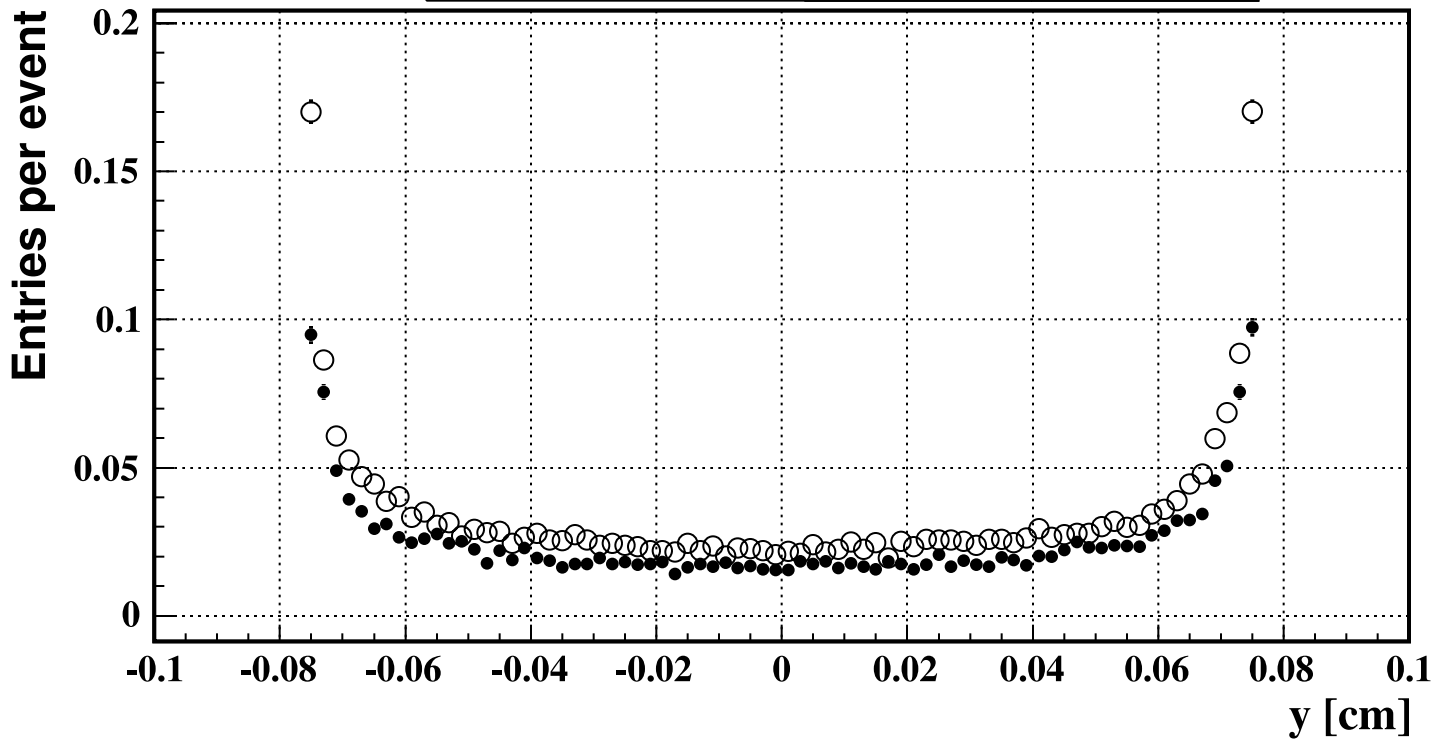


100 GeV Primary π^+
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	19358	Entries	26354
Mean	0.000528	Mean	0.000451
RMS	0.0528	RMS	0.0533
Underflow	0	Underflow	0
Overflow	0	Overflow	0



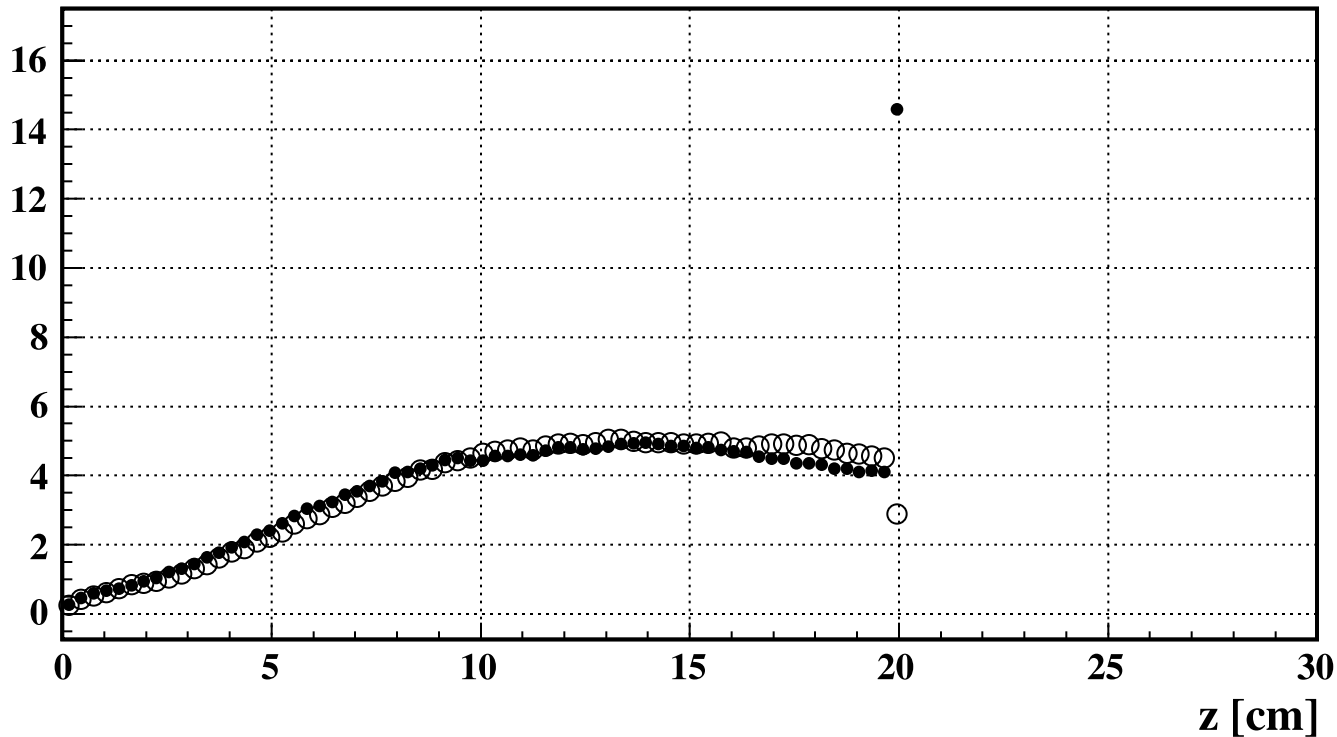
100 GeV Primary π^+
Secondary

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	2475030	Entries	2392163
Mean	12.4	Mean	12.3
RMS	4.97	RMS	4.74
Underflow	0.008	Underflow	0
Overflow	0	Overflow	0

Entries per event



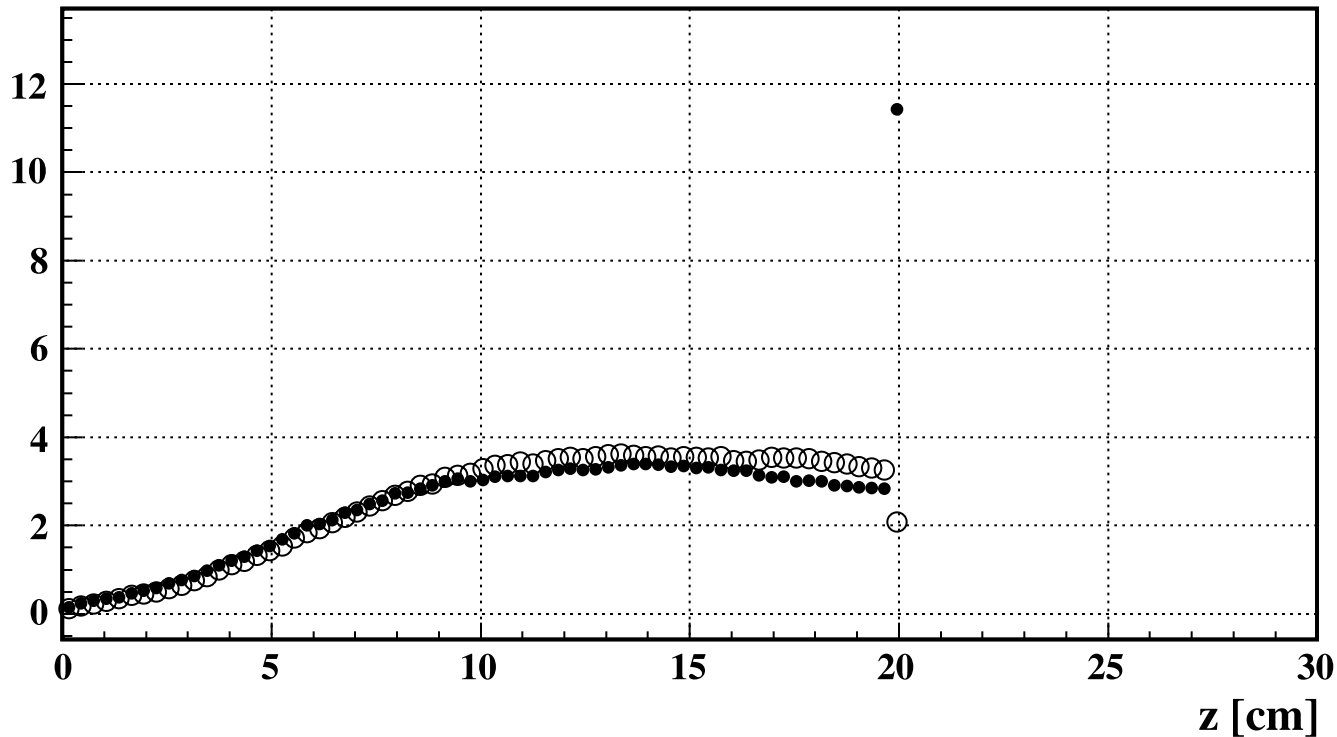
100 GeV Primary π^+
Secondary γ

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	1684304	1675636
Mean	12.6	12.5
RMS	4.91	4.61
Underflow	0.0062	0
Overflow	0	0

Entries per event

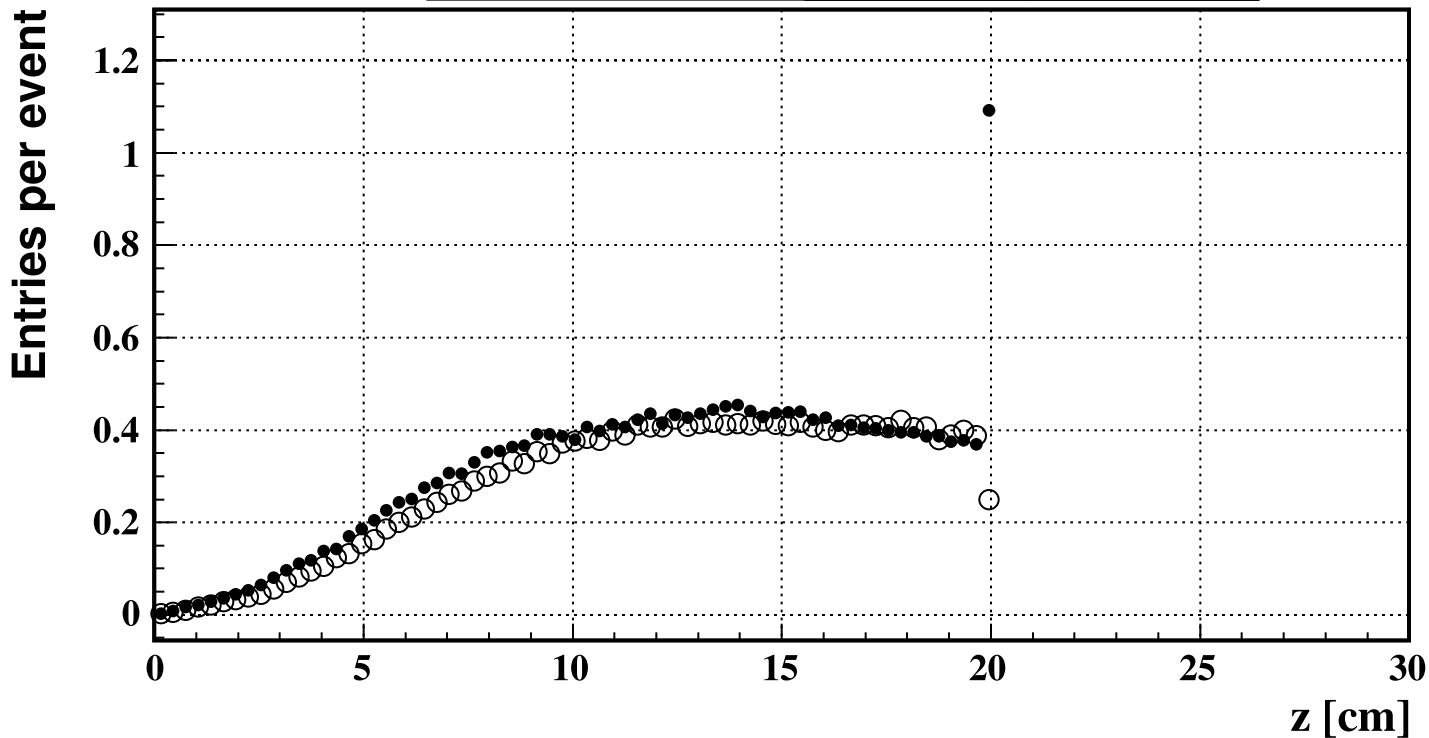


100 GeV Primary π^+
Secondary e^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	211033	189921
Mean	12.7	12.7
RMS	4.7	4.47
Underflow	0	0
Overflow	0	0

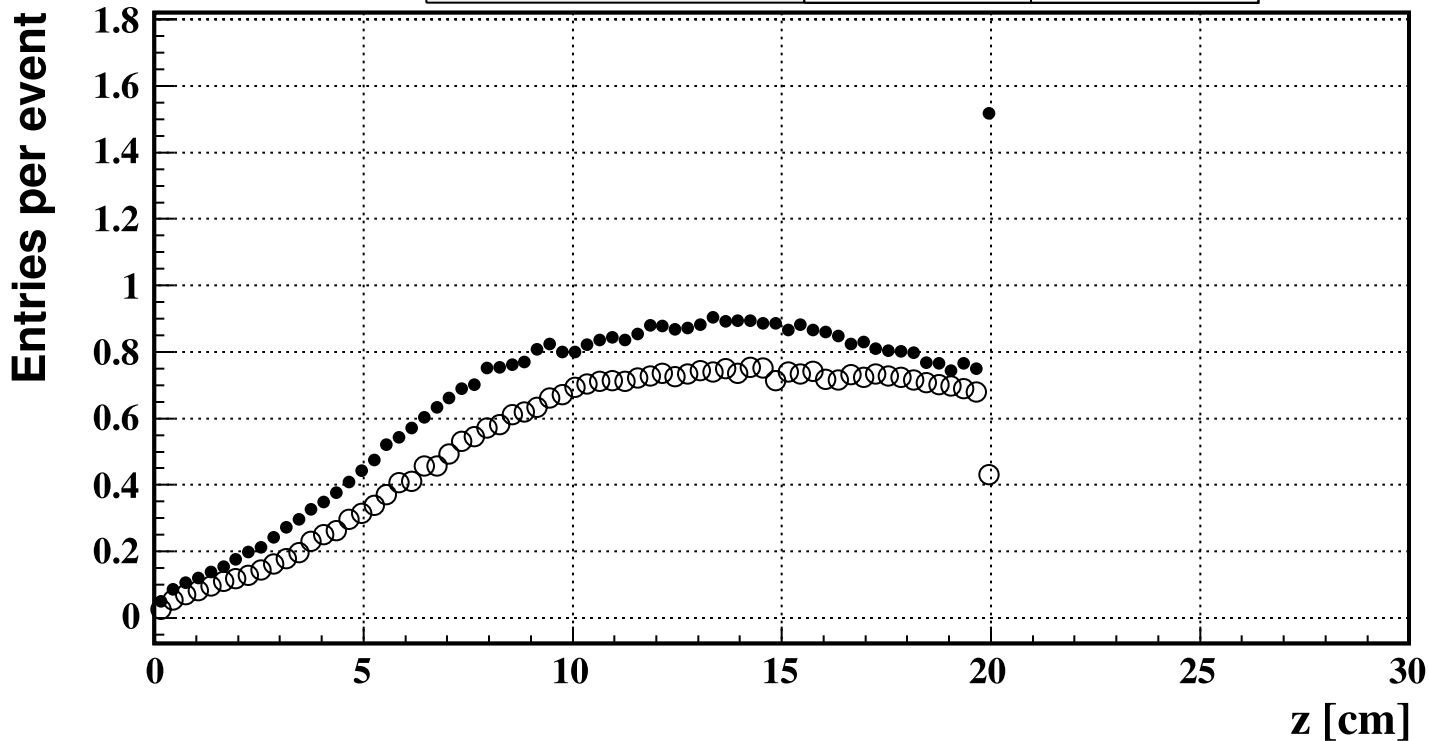


100 GeV Primary π^+
Secondary e^-

● GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	440552	Entries	353463
Mean	12.2	Mean	12.3
RMS	4.88	RMS	4.69
Underflow	0.0007	Underflow	0
Overflow	0	Overflow	0

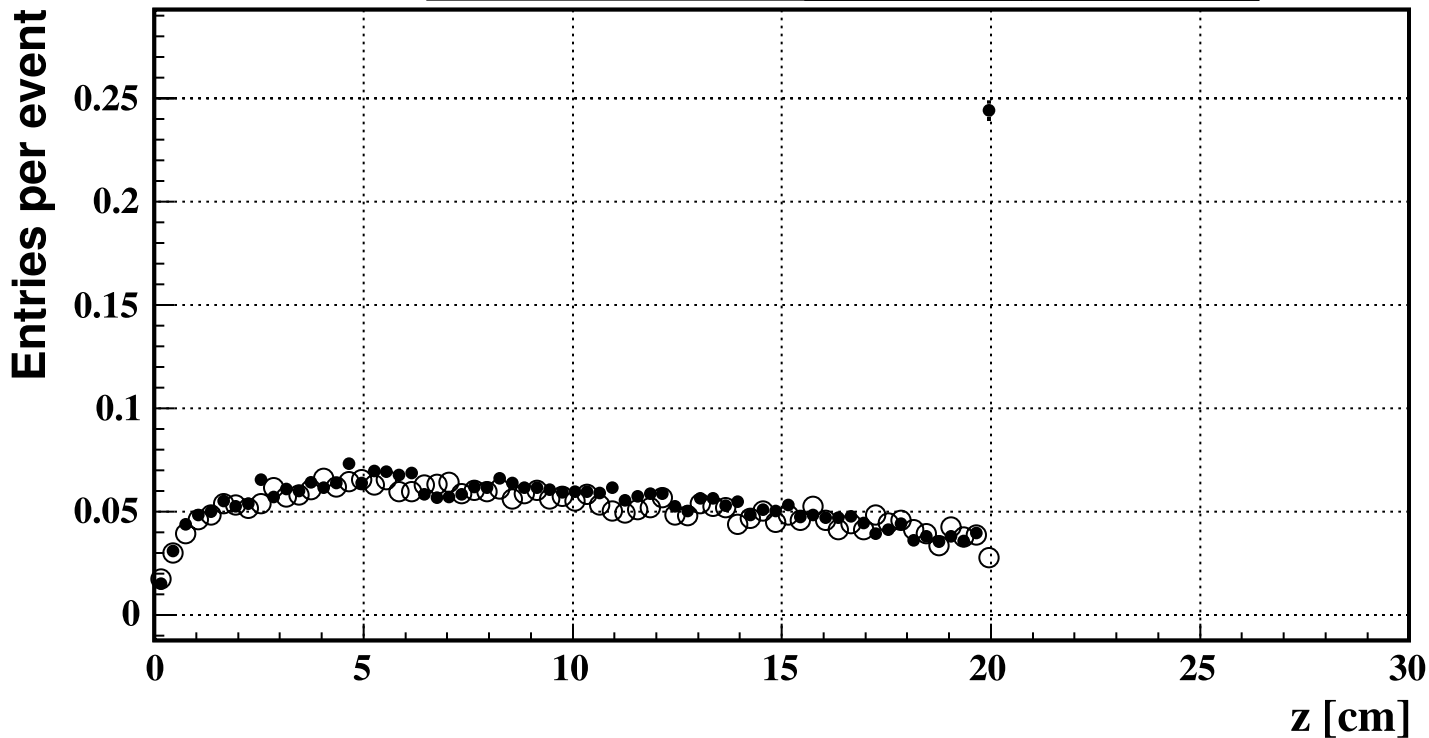


100 GeV Primary π^+
Secondary π^+

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	37937	Entries	34391
Mean	10.1	Mean	9.59
RMS	5.76	RMS	5.44
Underflow	0.0002	Underflow	0
Overflow	0	Overflow	0

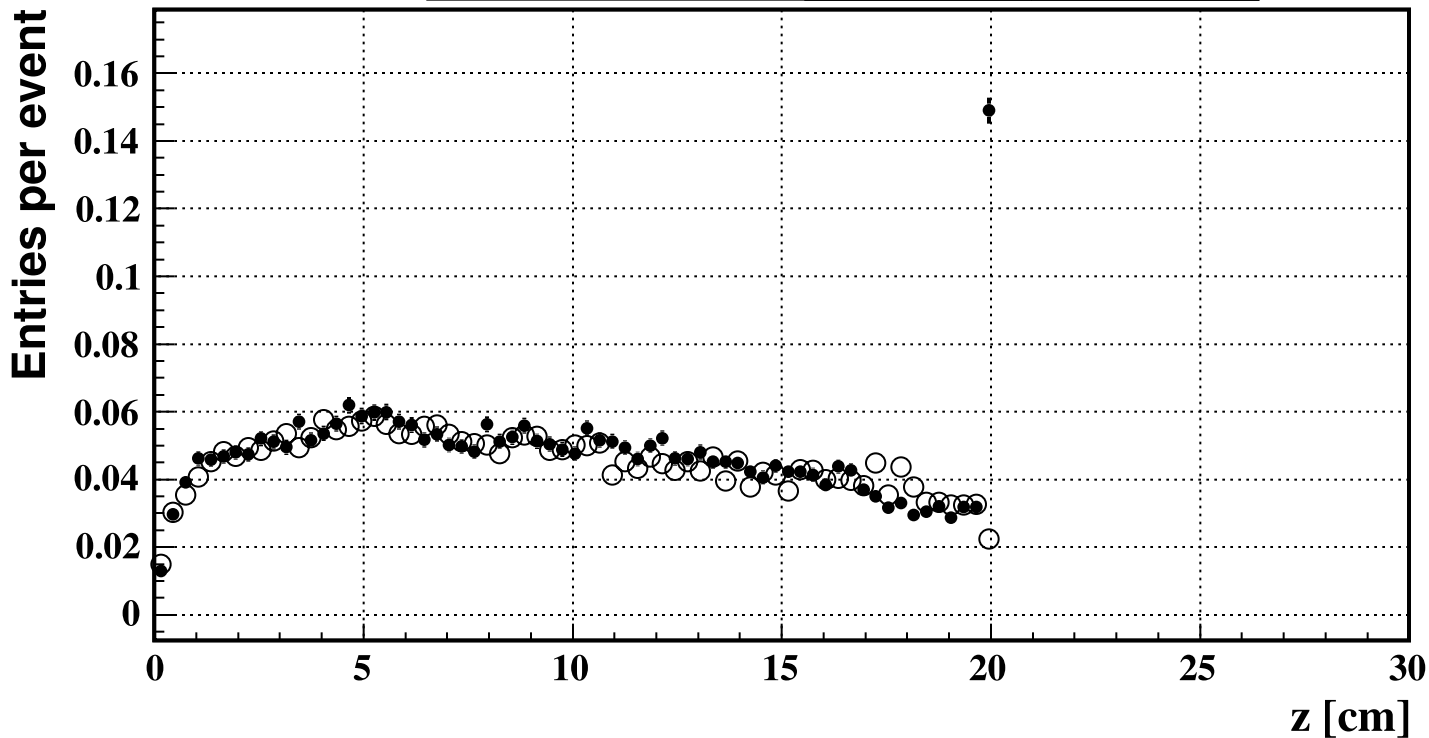


100 GeV Primary π^+
Secondary π^-

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	31878	30175
Mean	9.86	9.54
RMS	5.66	5.46
Underflow	0.0001	0
Overflow	0	0

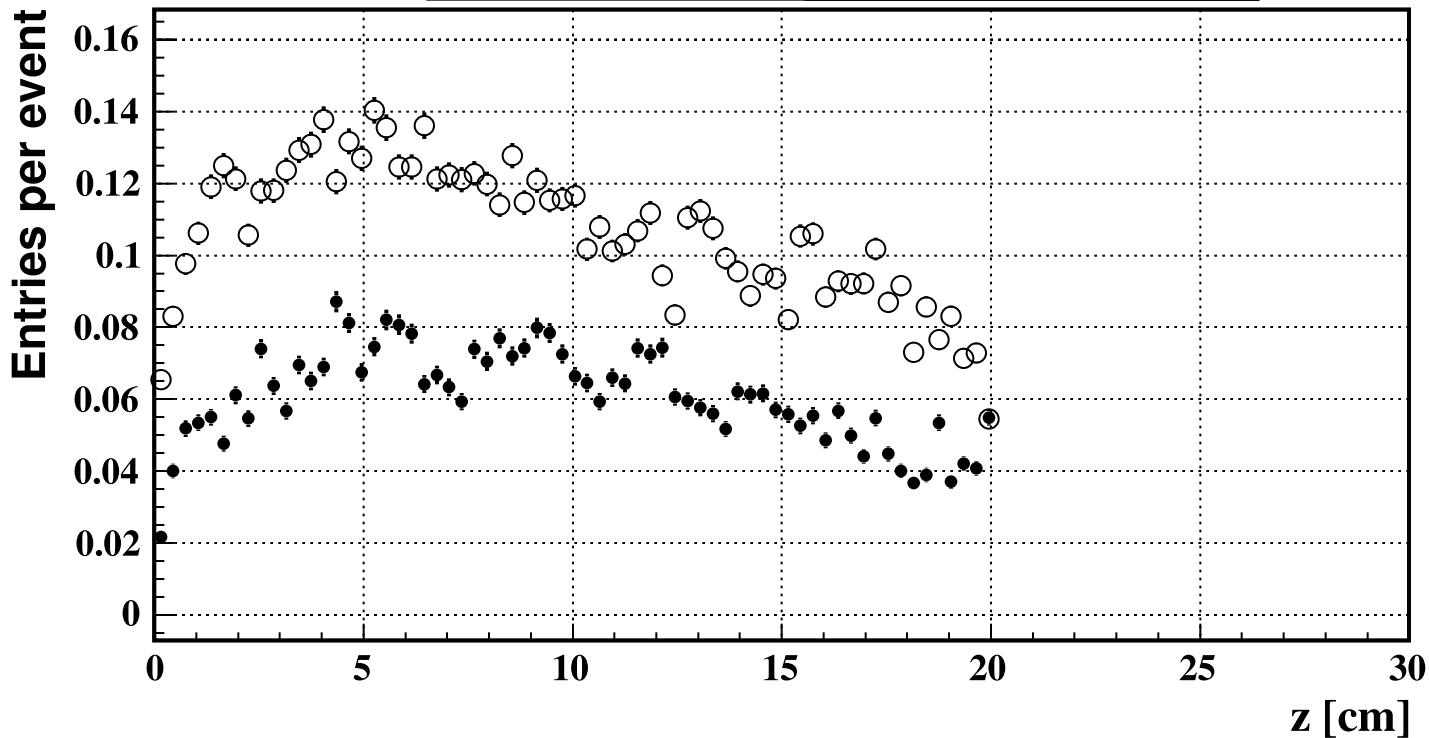


100 GeV Primary π^+
Secondary n

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	40626	71220
Mean	9.59	9.38
RMS	5.38	5.52
Underflow	0.0008	0
Overflow	0	0

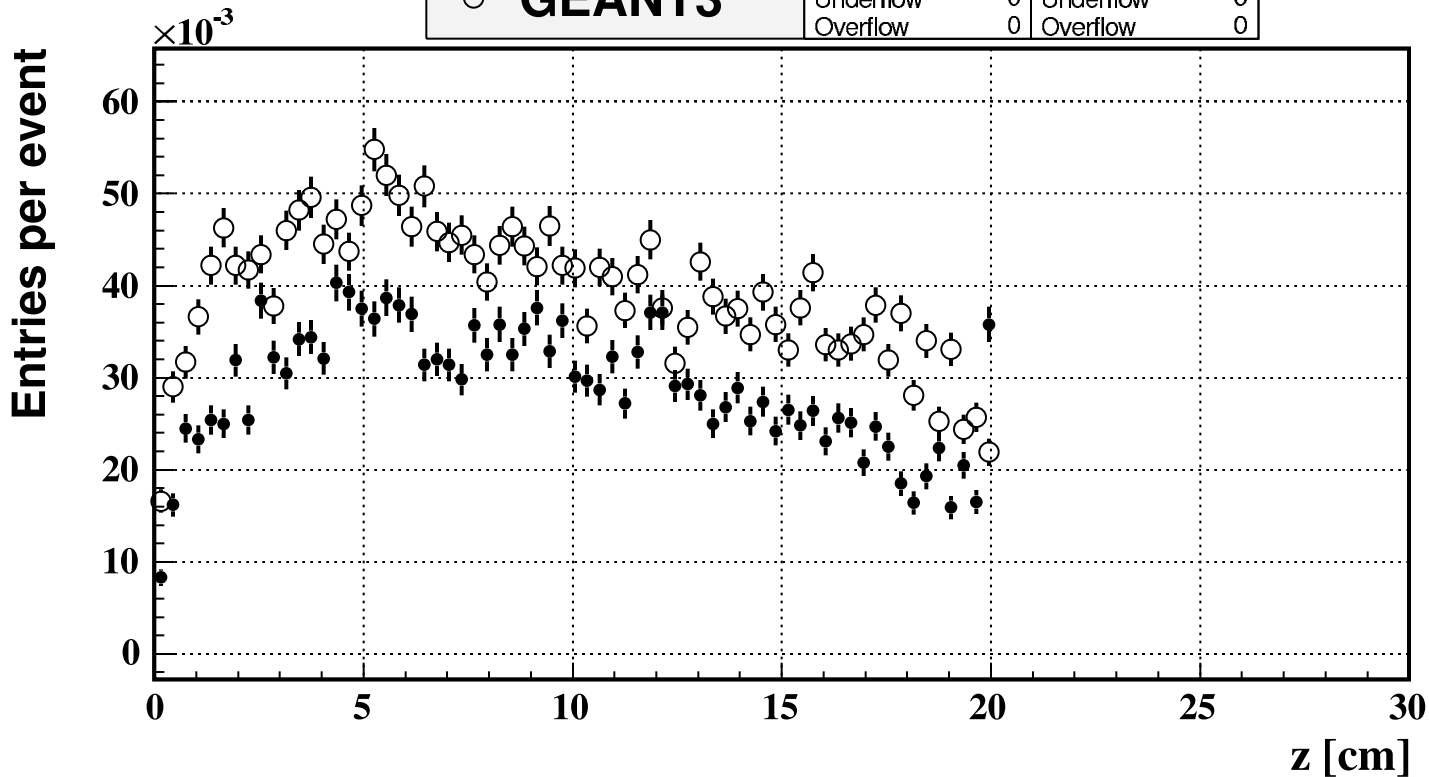


100 GeV Primary π^+
Secondary p

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	19358	26354
Mean	9.55	9.5
RMS	5.4	5.49
Underflow	0	0
Overflow	0	0

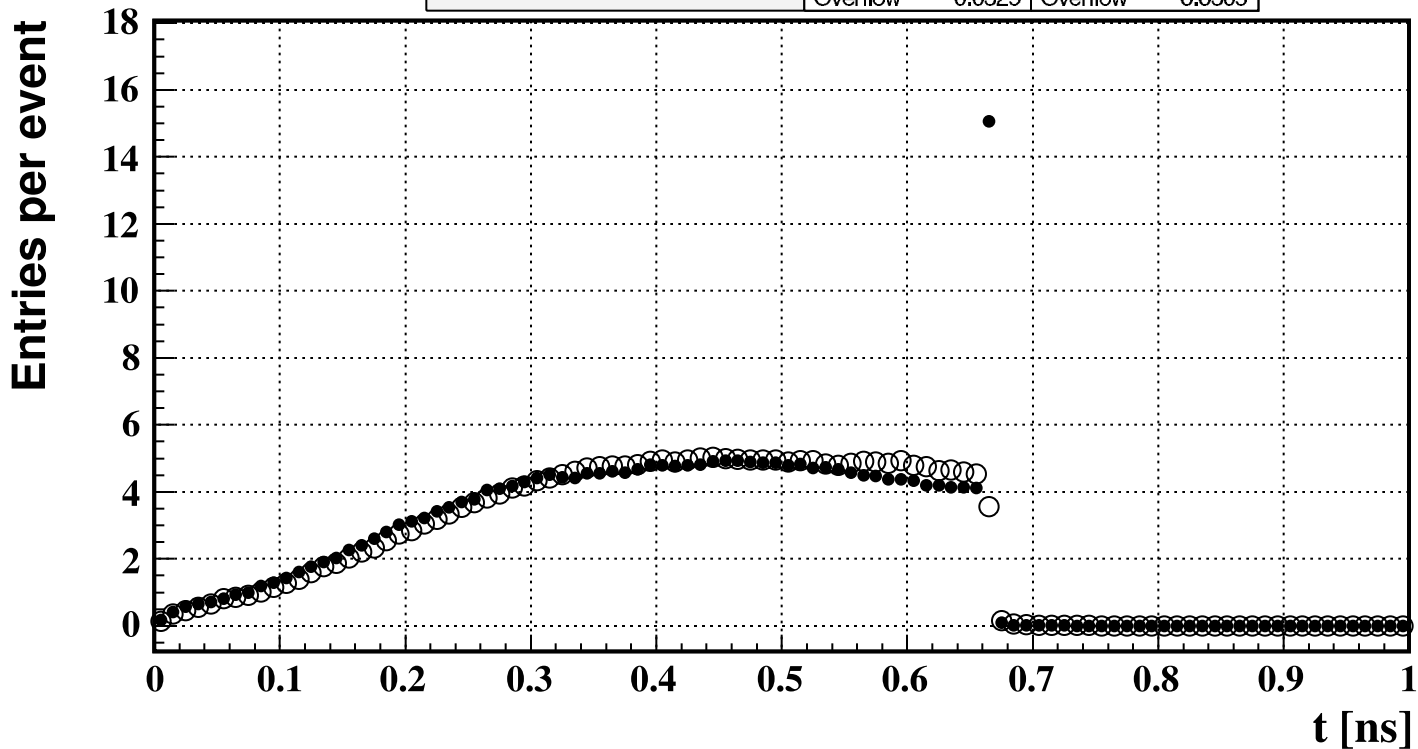


100 GeV Primary π^+
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	2475030	Entries	2392163
Mean	0.414	Mean	0.411
RMS	0.166	RMS	0.158
Underflow	0	Underflow	0
Overflow	0.0329	Overflow	0.0305

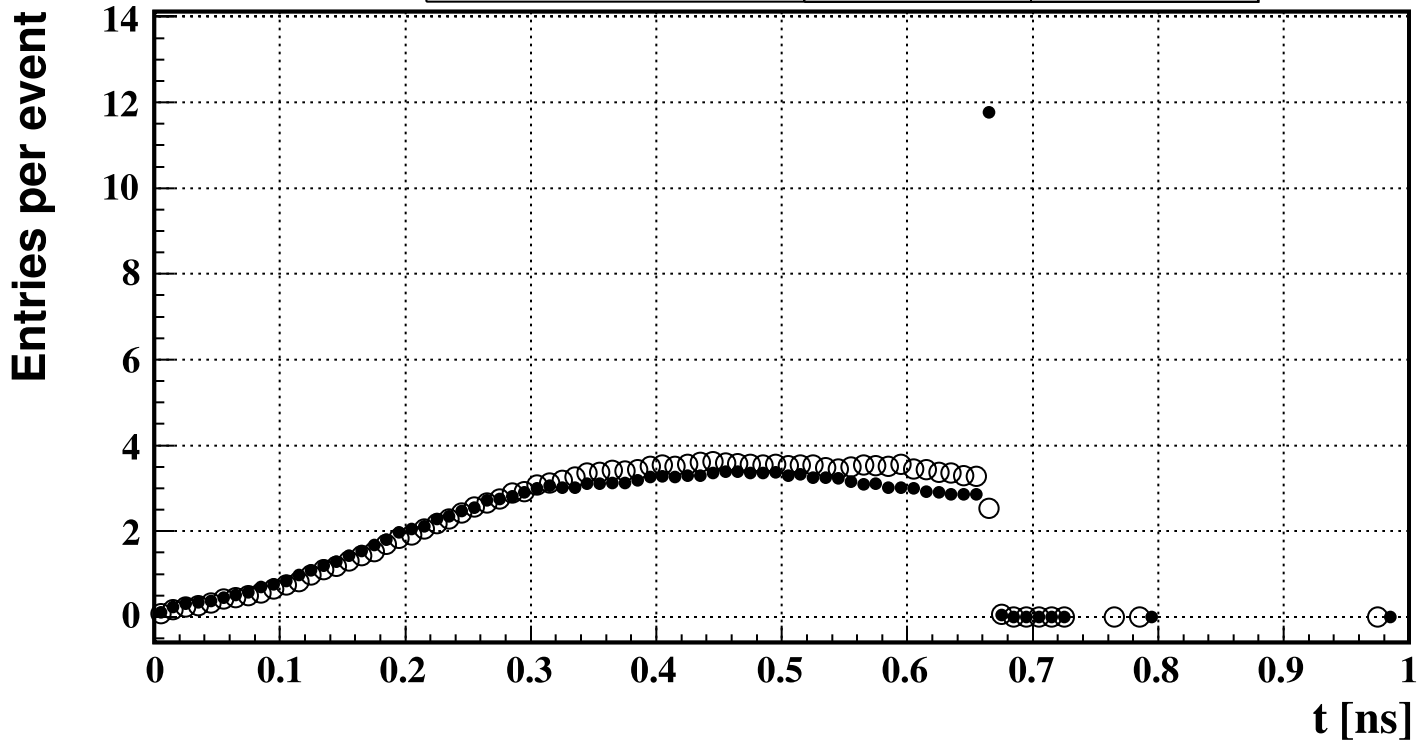


100 GeV Primary π^+
Secondary γ

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	1684304	Entries	1675636
Mean	0.421	Mean	0.417
RMS	0.164	RMS	0.154
Underflow	0	Underflow	0
Overflow	0.0054	Overflow	0.0045

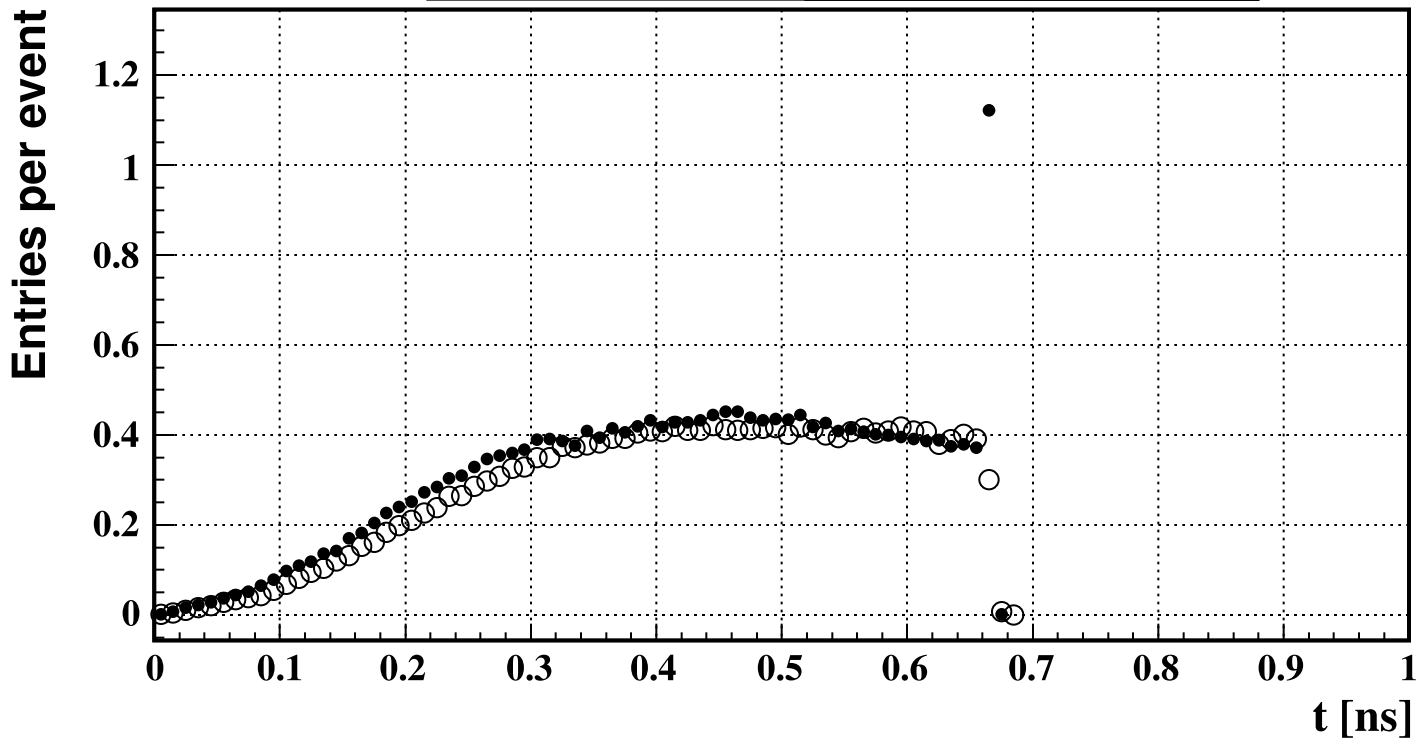


100 GeV Primary π^+
Secondary e^+

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	211033	Entries	189921
Mean	0.423	Mean	0.425
RMS	0.157	RMS	0.149
Underflow	0	Underflow	0
Overflow	0.009	Overflow	0.008

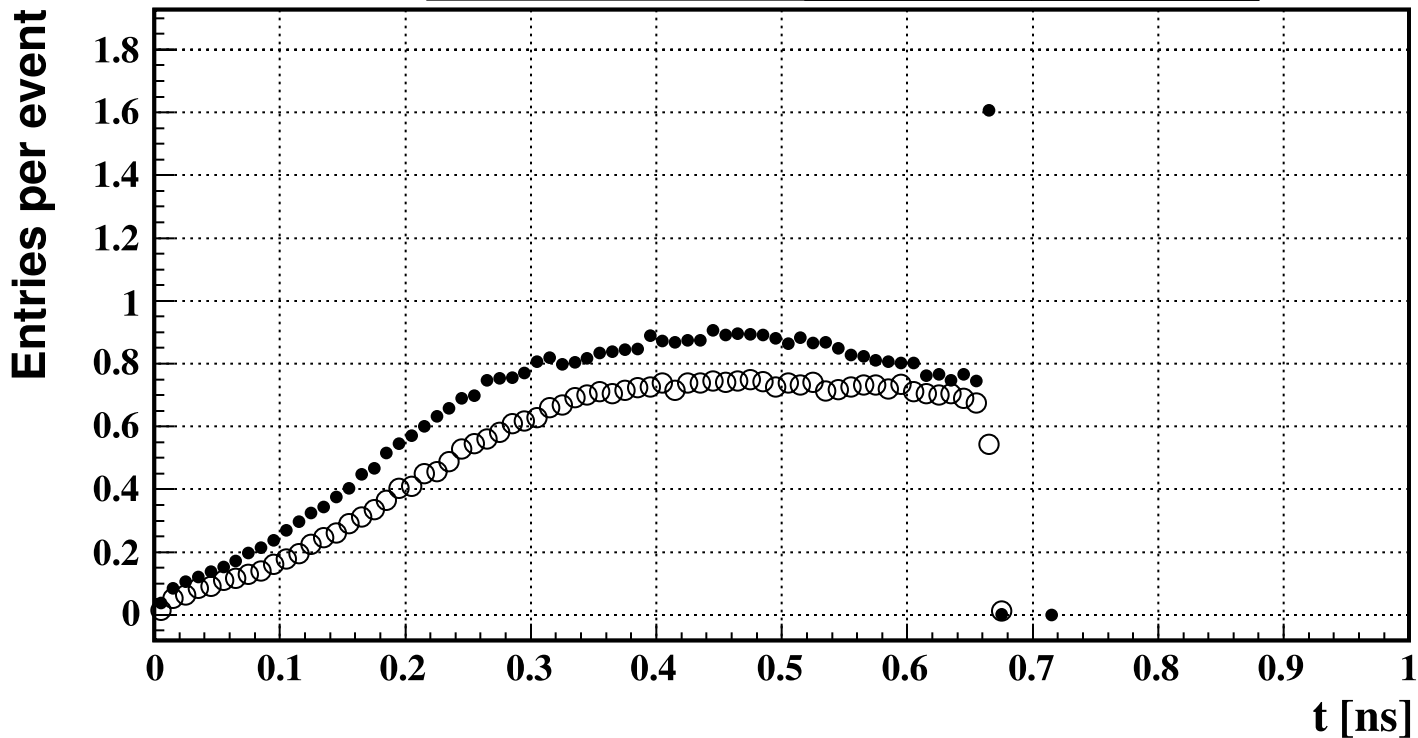


100 GeV Primary π^+
Secondary e^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	440552	Entries	353463
Mean	0.407	Mean	0.413
RMS	0.163	RMS	0.157
Underflow	0	Underflow	0
Overflow	0.0001	Overflow	0.0003

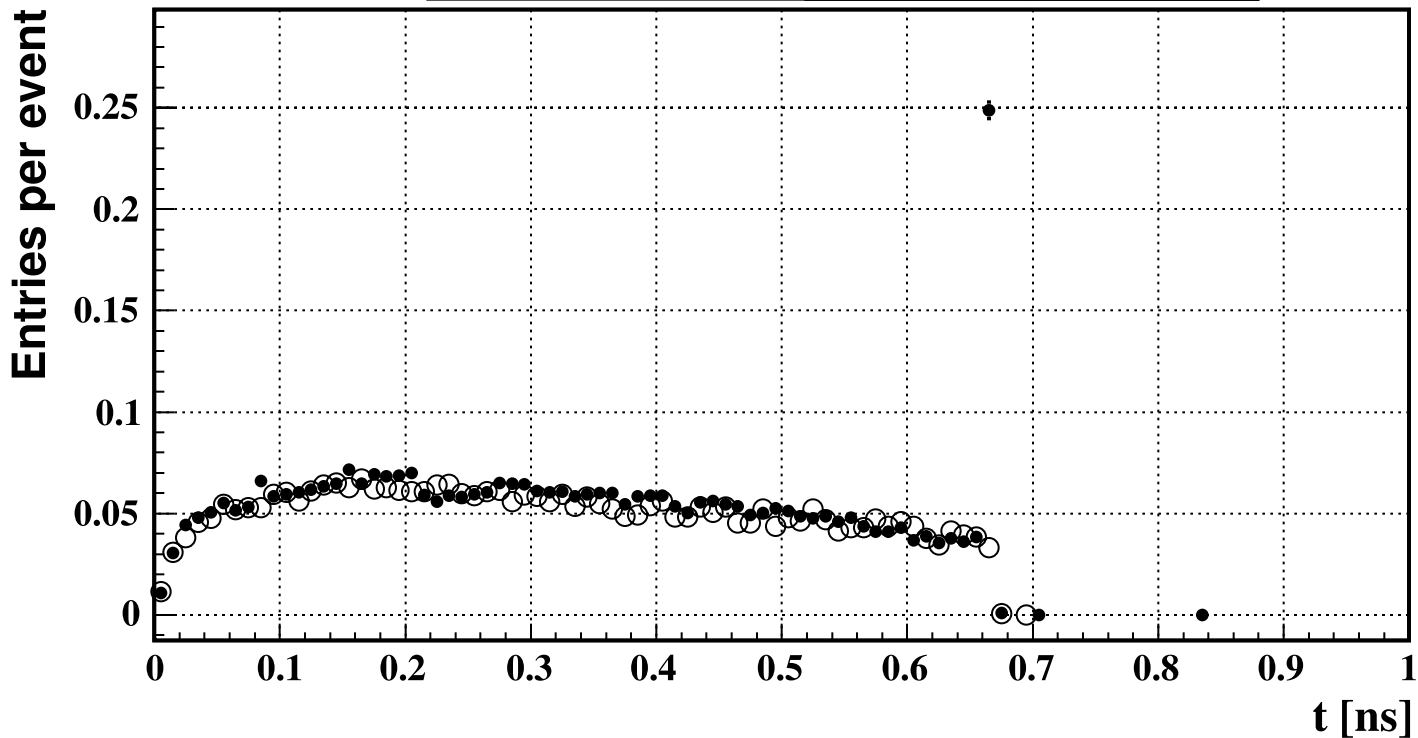


100 GeV Primary π^+
Secondary π^+

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	37937	Entries	34391
Mean	0.339	Mean	0.321
RMS	0.192	RMS	0.182
Underflow	0	Underflow	0
Overflow	0.0002	Overflow	0

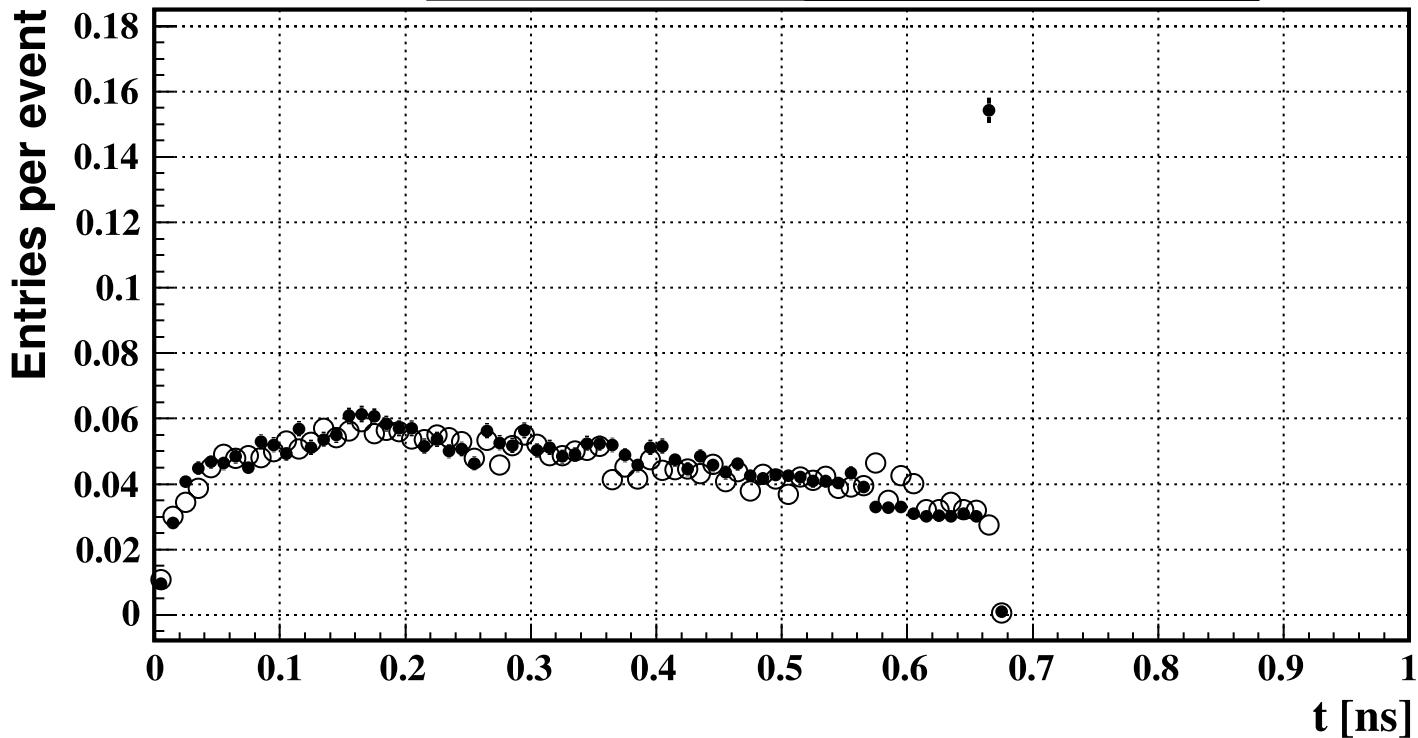


100 GeV Primary π^+
Secondary π^-

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	31878	Entries	30175
Mean	0.33	Mean	0.319
RMS	0.189	RMS	0.182
Underflow	0	Underflow	0
Overflow	0	Overflow	0.0001

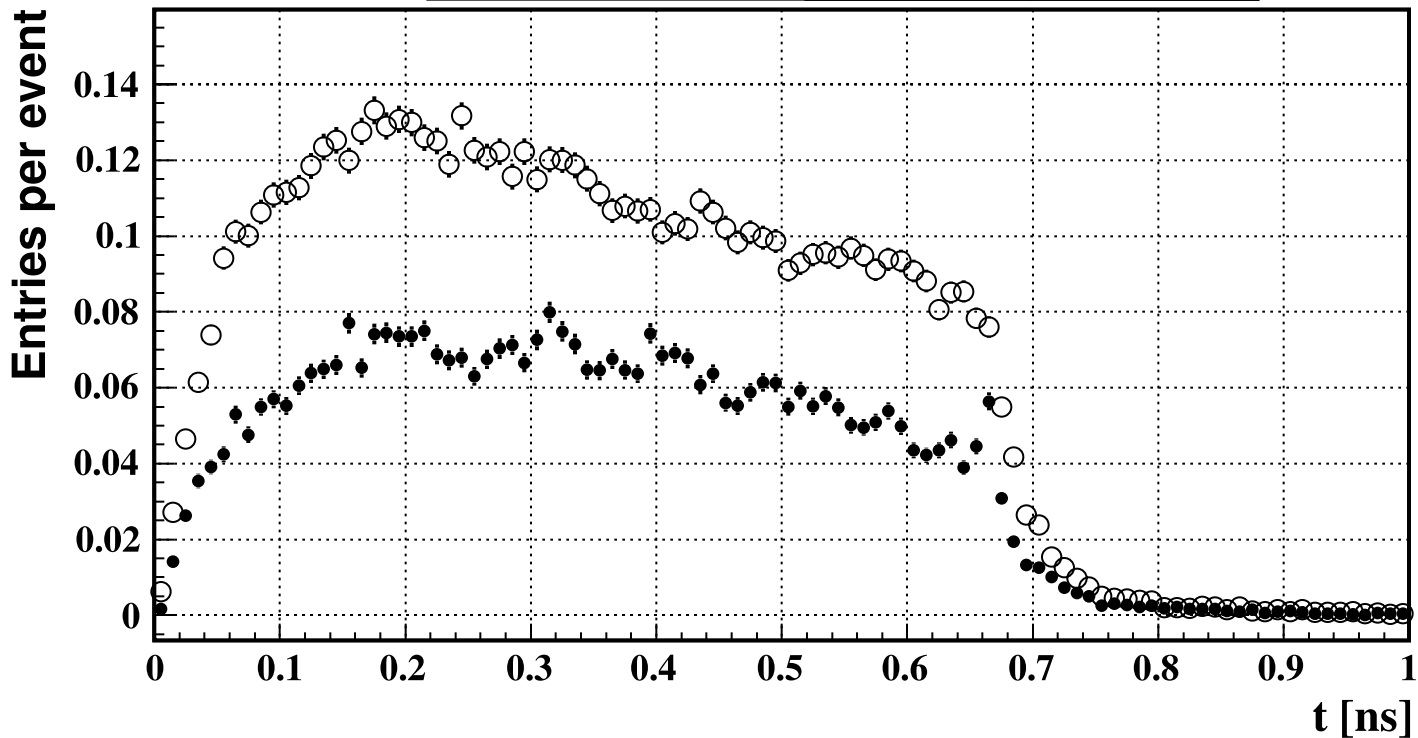


100 GeV Primary π^+
Secondary n

● GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	40626	71220
Mean	0.35	0.345
RMS	0.186	0.189
Underflow	0	0
Overflow	0.0169	0.0158

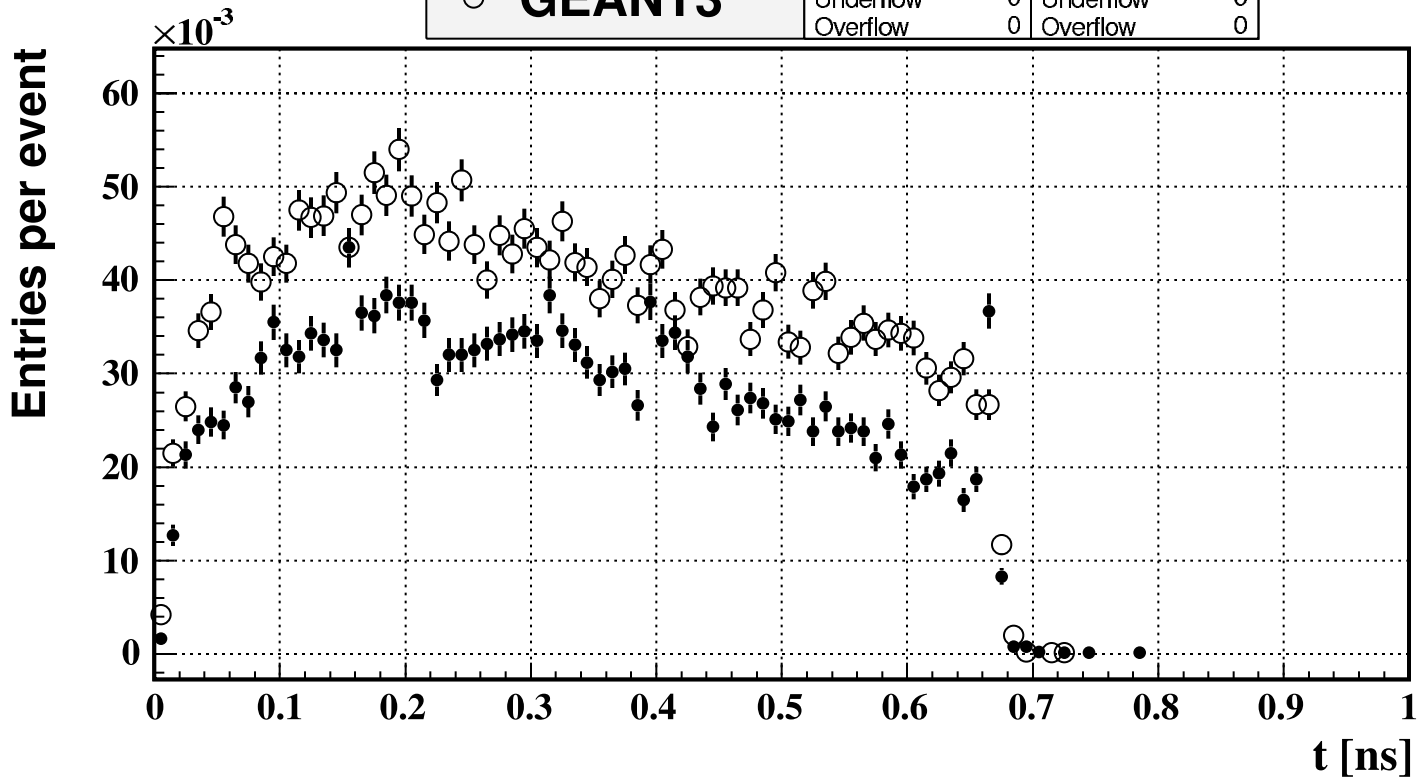


100 GeV Primary π^+
Secondary p

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	19358	26354
Mean	0.324	0.324
RMS	0.18	0.183
Underflow	0	0
Overflow	0	0



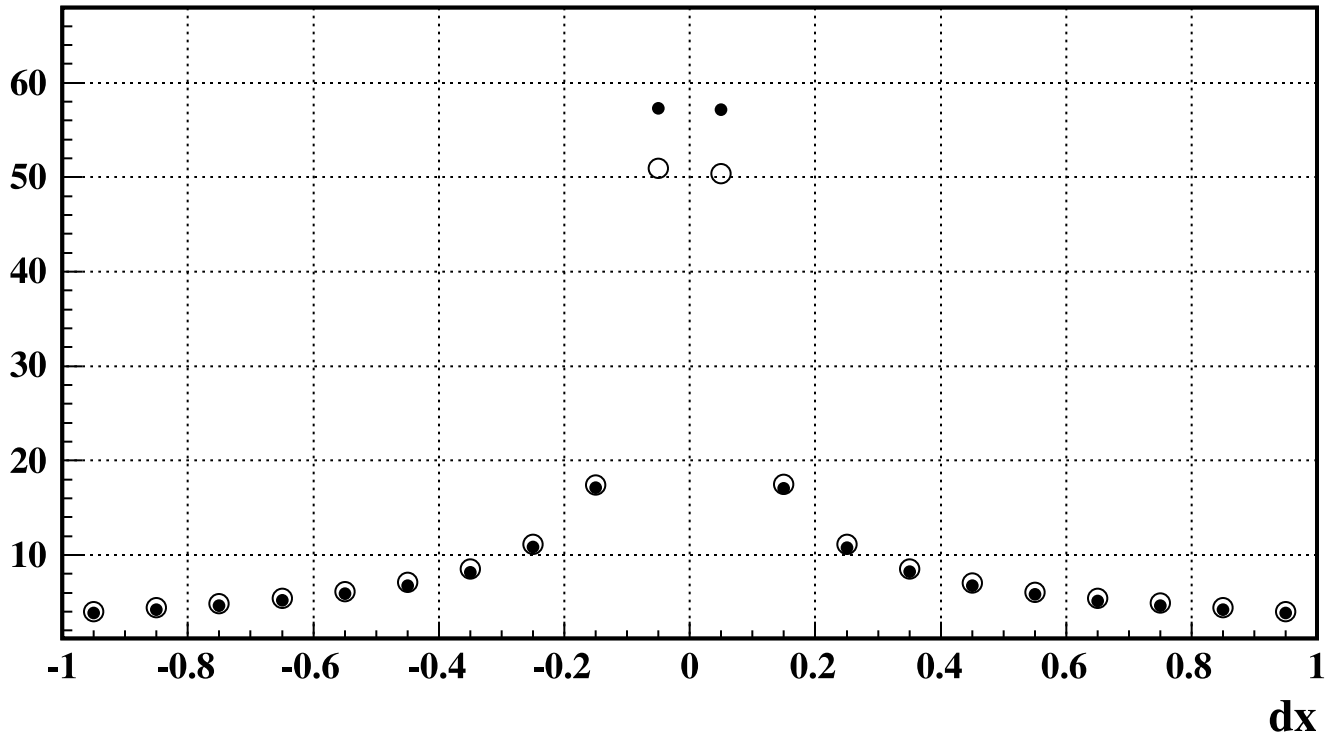
100 GeV Primary π^+
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	2475030	Entries	2392163
Mean	-0.000326	Mean	-0.00029
RMS	0.366	RMS	0.381
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event

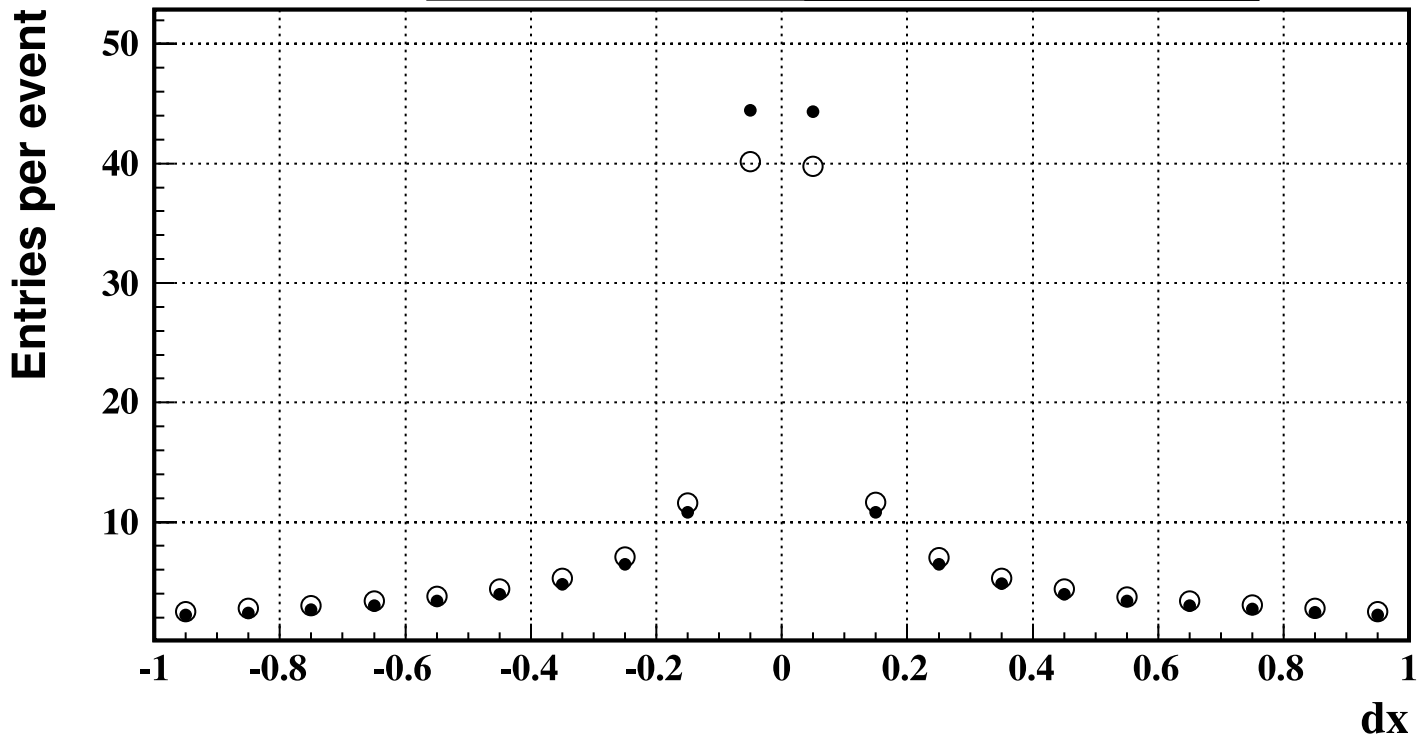


100 GeV Primary π^+
Secondary γ

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	1684304	Entries	1675636
Mean	0.000348	Mean	4.11e-05
RMS	0.339	RMS	0.36
Underflow	0	Underflow	0
Overflow	0	Overflow	0



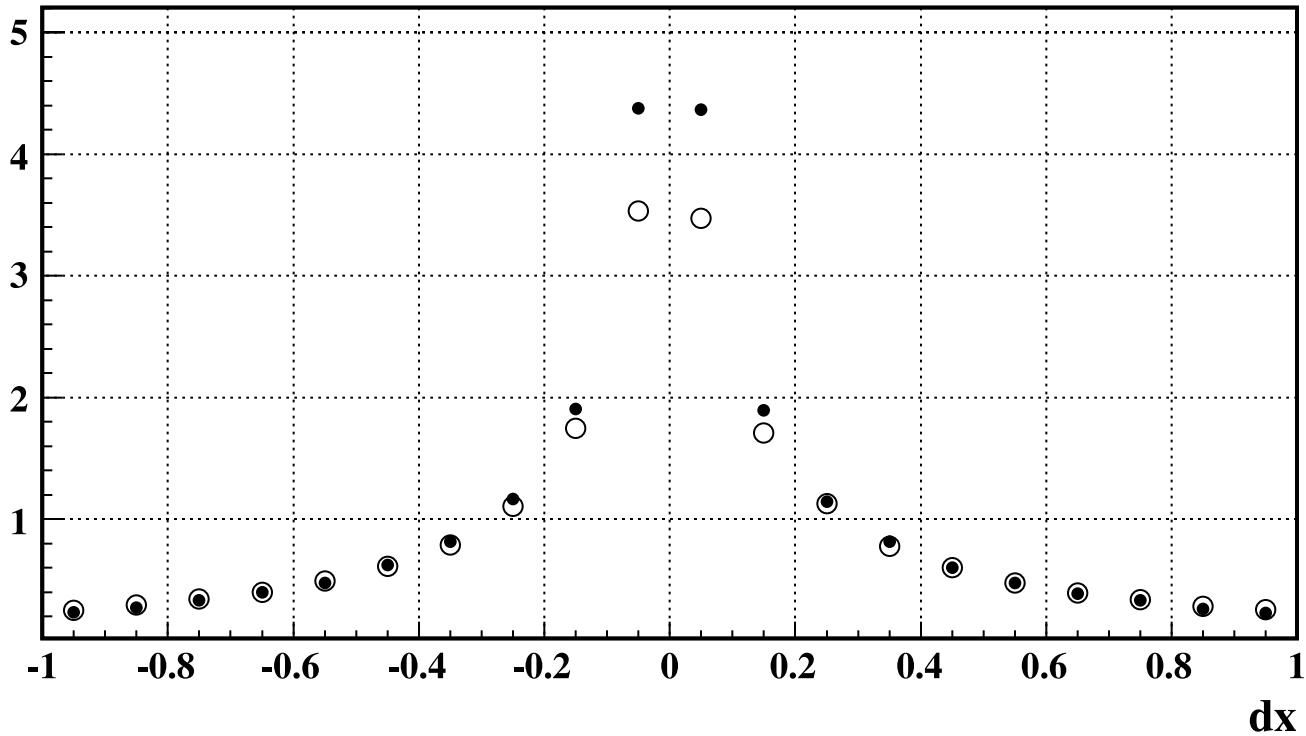
100 GeV Primary π^+
Secondary e^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	211033	189921
Mean	-0.00176	-0.00181
RMS	0.343	0.366
Underflow	0	0
Overflow	0	0

Entries per event



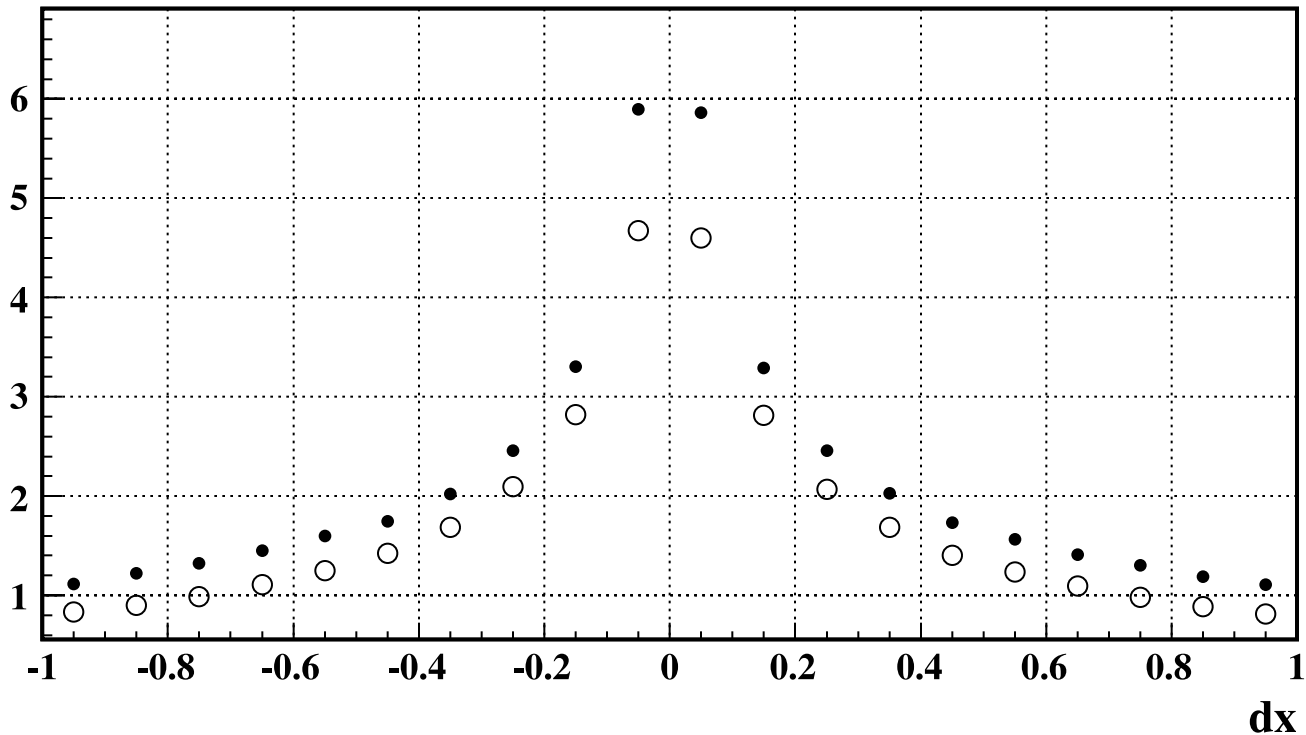
100 GeV Primary π^+
Secondary e^-

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	440552	Entries	353463
Mean	-0.00222	Mean	-0.00198
RMS	0.454	RMS	0.443
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event

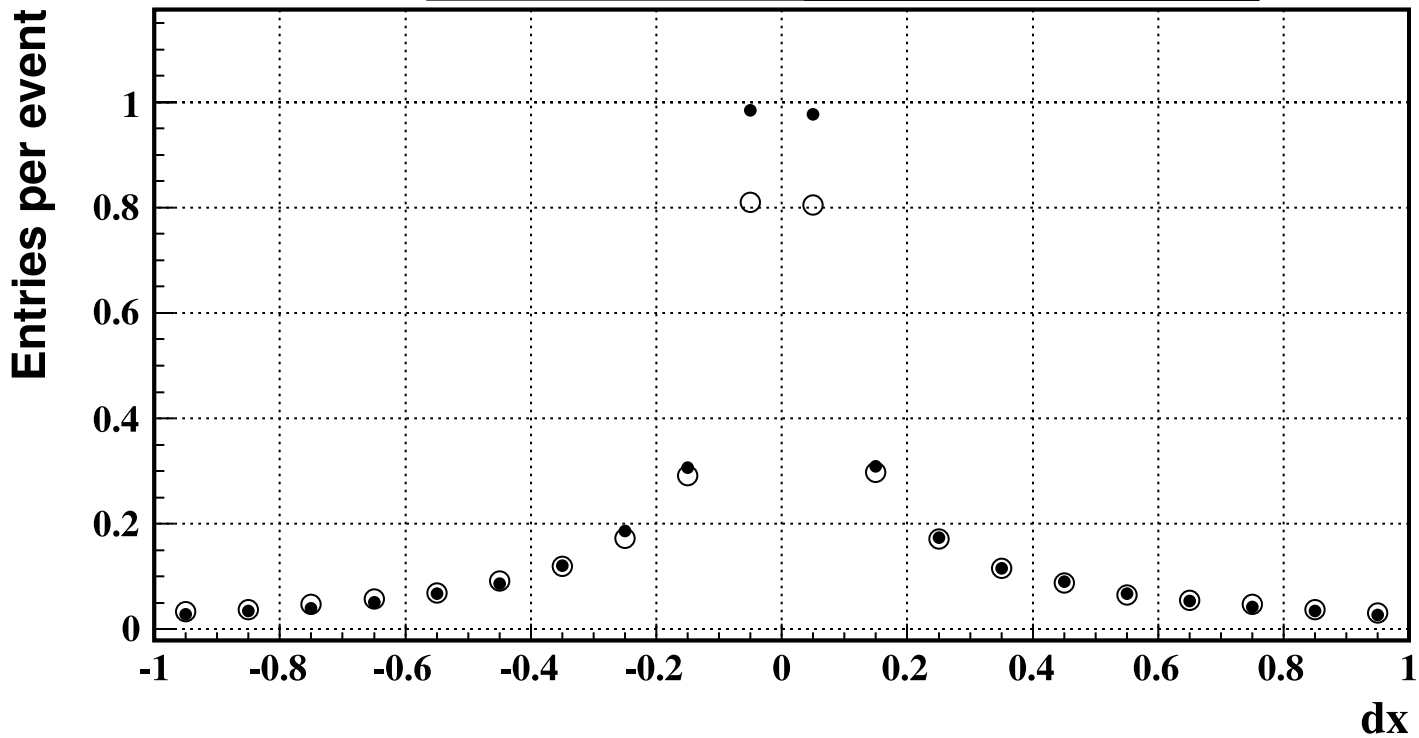


100 GeV Primary π^+
Secondary π^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	37937	Entries	34391
Mean	-0.000294	Mean	-0.00225
RMS	0.297	RMS	0.321
Underflow	0	Underflow	0
Overflow	0	Overflow	0

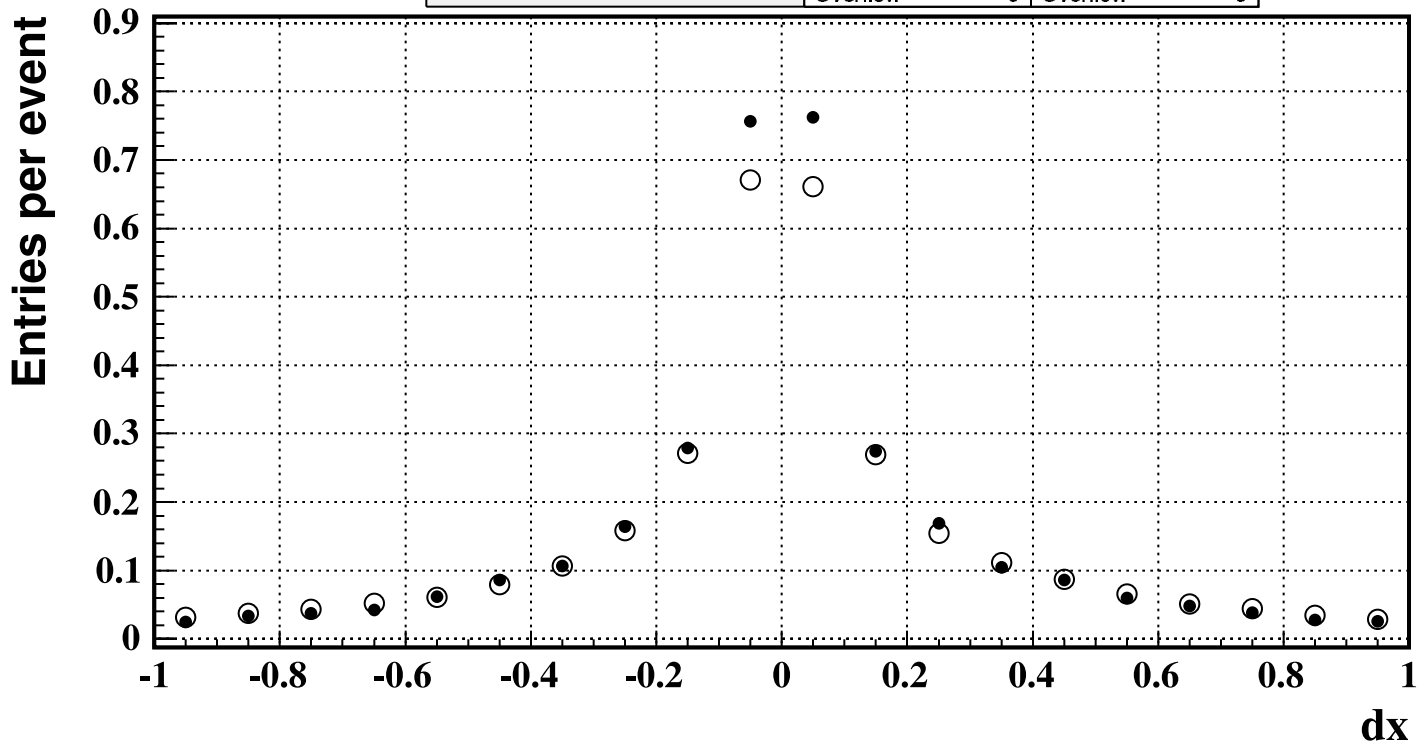


100 GeV Primary π^+
Secondary π^-

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	31878	Entries	30175
Mean	-0.00026	Mean	0.000331
RMS	0.308	RMS	0.331
Underflow	0	Underflow	0
Overflow	0	Overflow	0

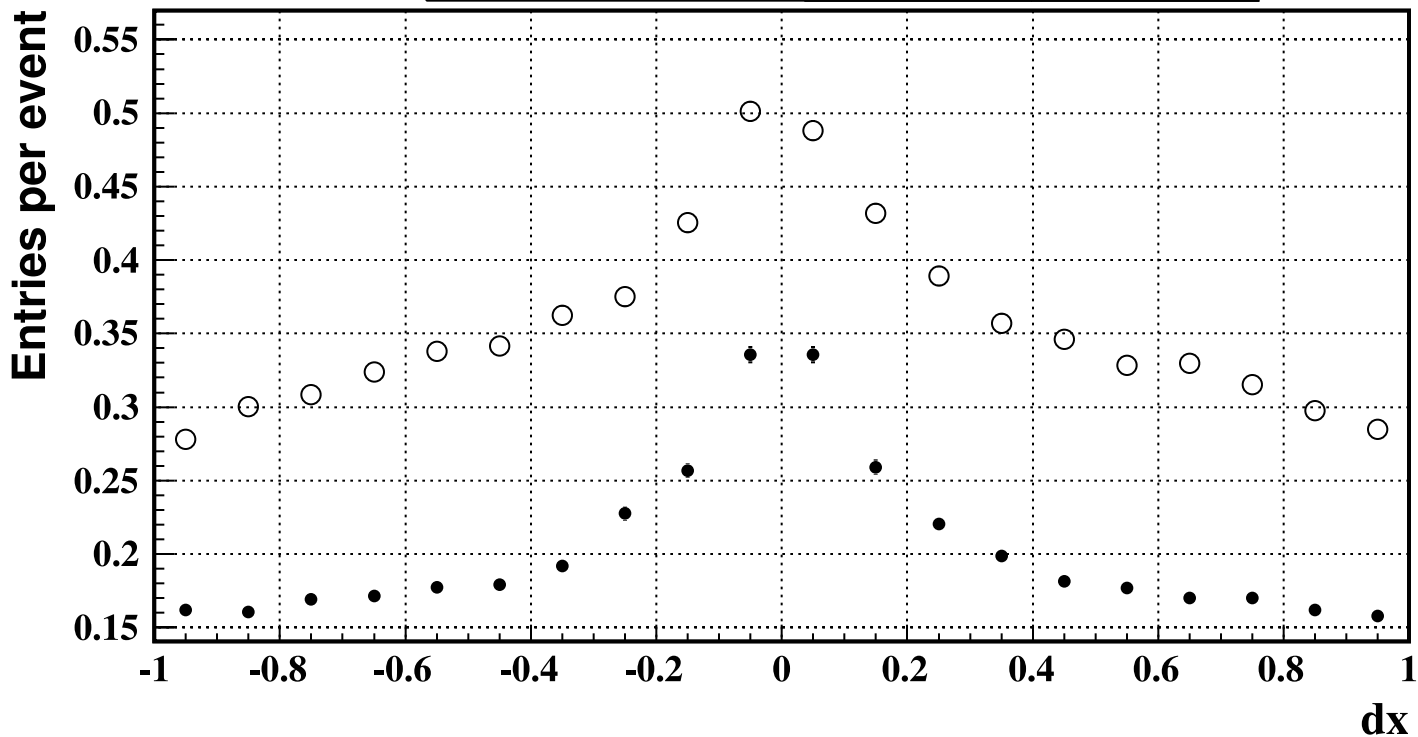


100 GeV Primary π^+
Secondary n

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	40626	Entries	71220
Mean	-0.000269	Mean	0.00188
RMS	0.527	RMS	0.539
Underflow	0	Underflow	0
Overflow	0	Overflow	0

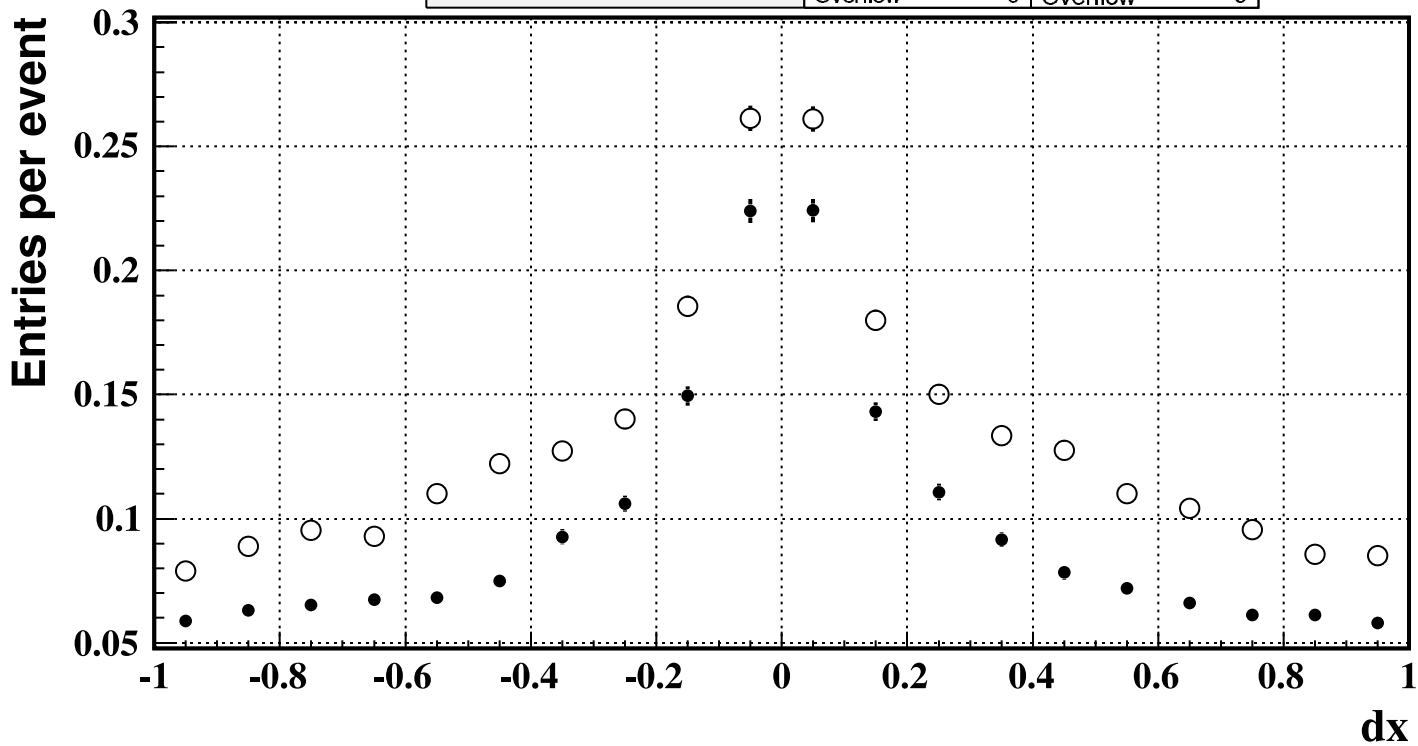


100 GeV Primary π^+
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	19358	Entries	26354
Mean	-0.00159	Mean	0.0065
RMS	0.477	RMS	0.493
Underflow	0	Underflow	0
Overflow	0	Overflow	0



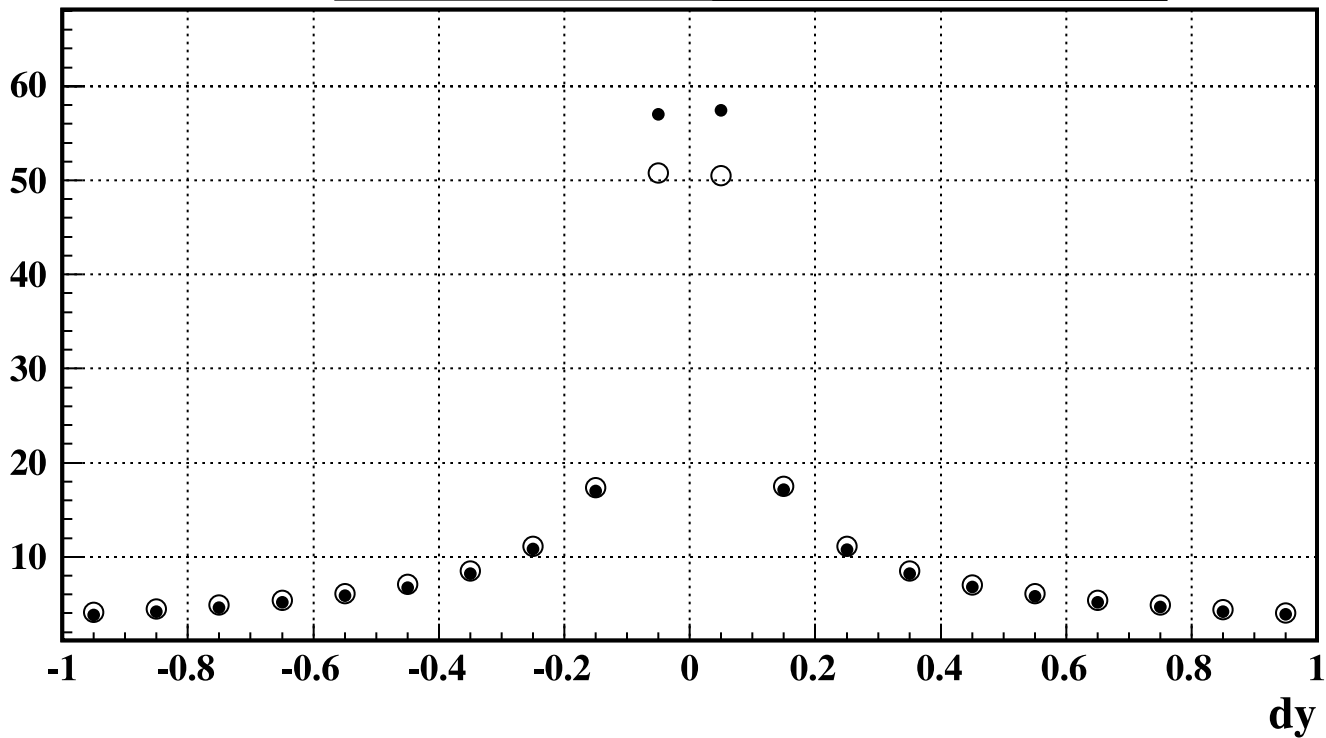
100 GeV Primary π^+
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	2475030	Entries	2392163
Mean	0.00032	Mean	-8.84e-05
RMS	0.366	RMS	0.381
Underflow	0	Underflow	0
Overflow	0	Overflow	0.0001

Entries per event

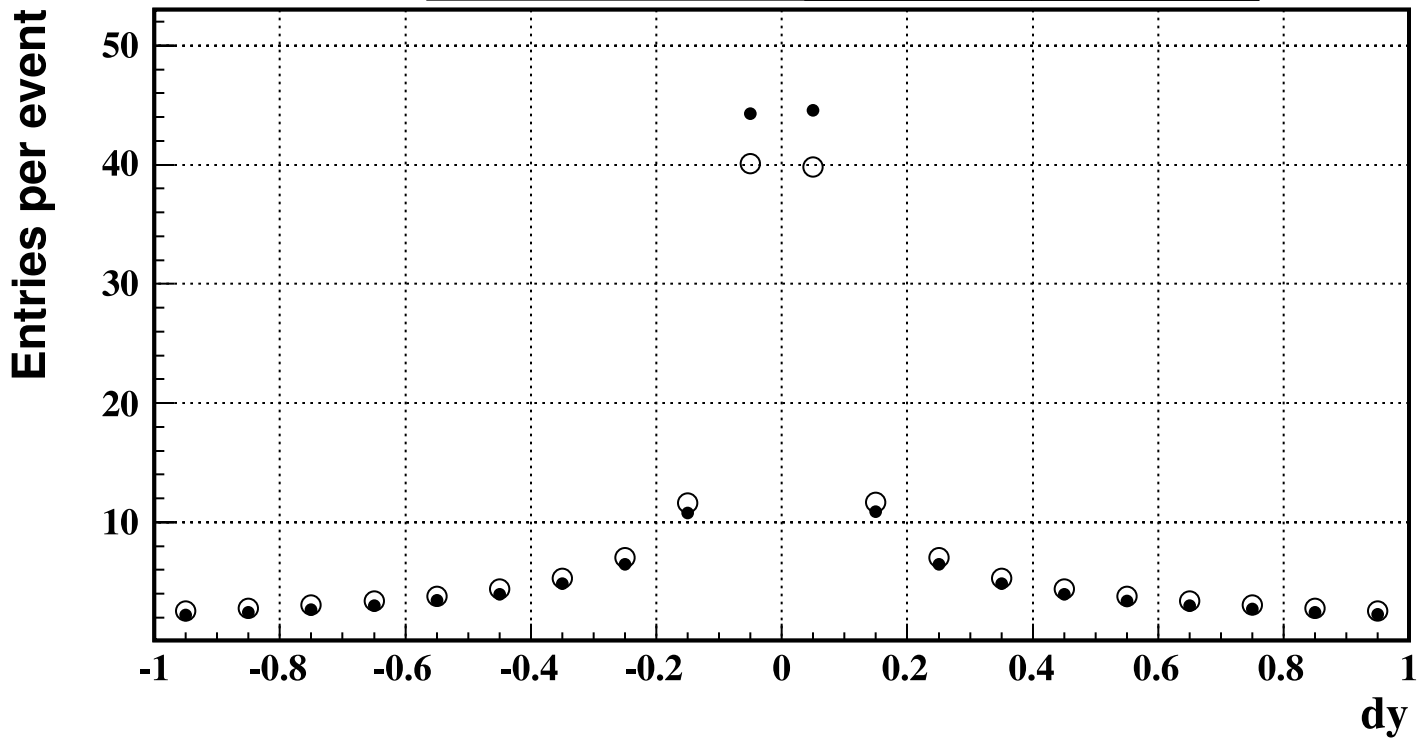


100 GeV Primary π^+
Secondary γ

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	1684304	Entries	1675636
Mean	0.000278	Mean	1.37e-05
RMS	0.339	RMS	0.36
Underflow	0	Underflow	0
Overflow	0	Overflow	0.0001



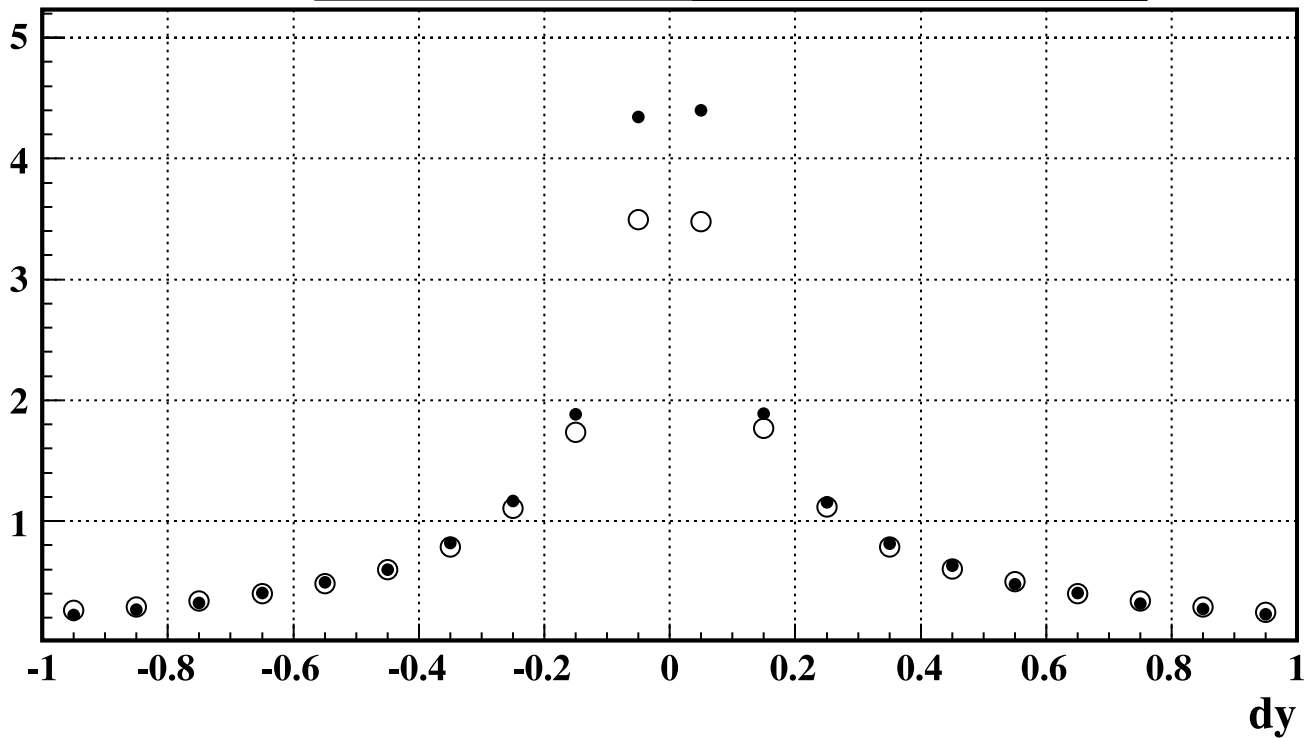
100 GeV Primary π^+
Secondary e^+

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	211033	Entries	189921
Mean	0.000213	Mean	1.06e-05
RMS	0.343	RMS	0.366
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event



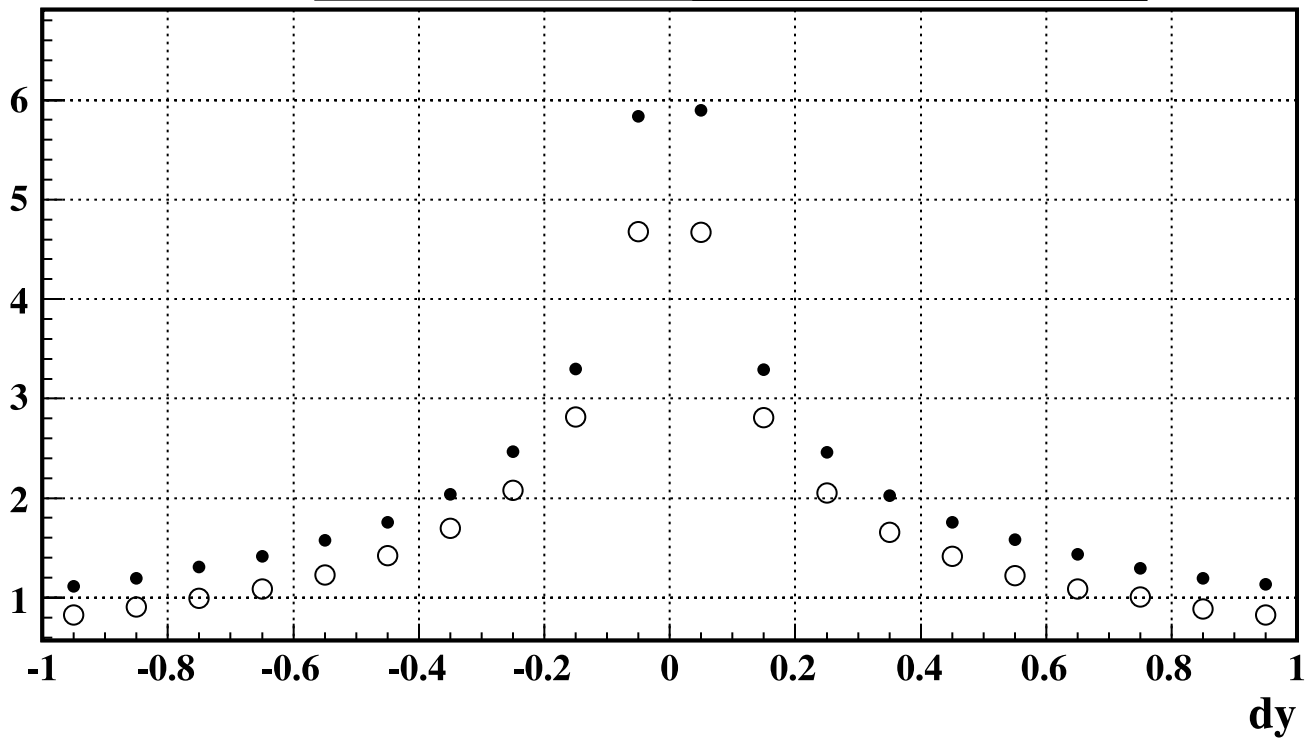
100 GeV Primary π^+
Secondary e^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	440552	Entries	353463
Mean	0.000365	Mean	-0.000987
RMS	0.453	RMS	0.444
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event

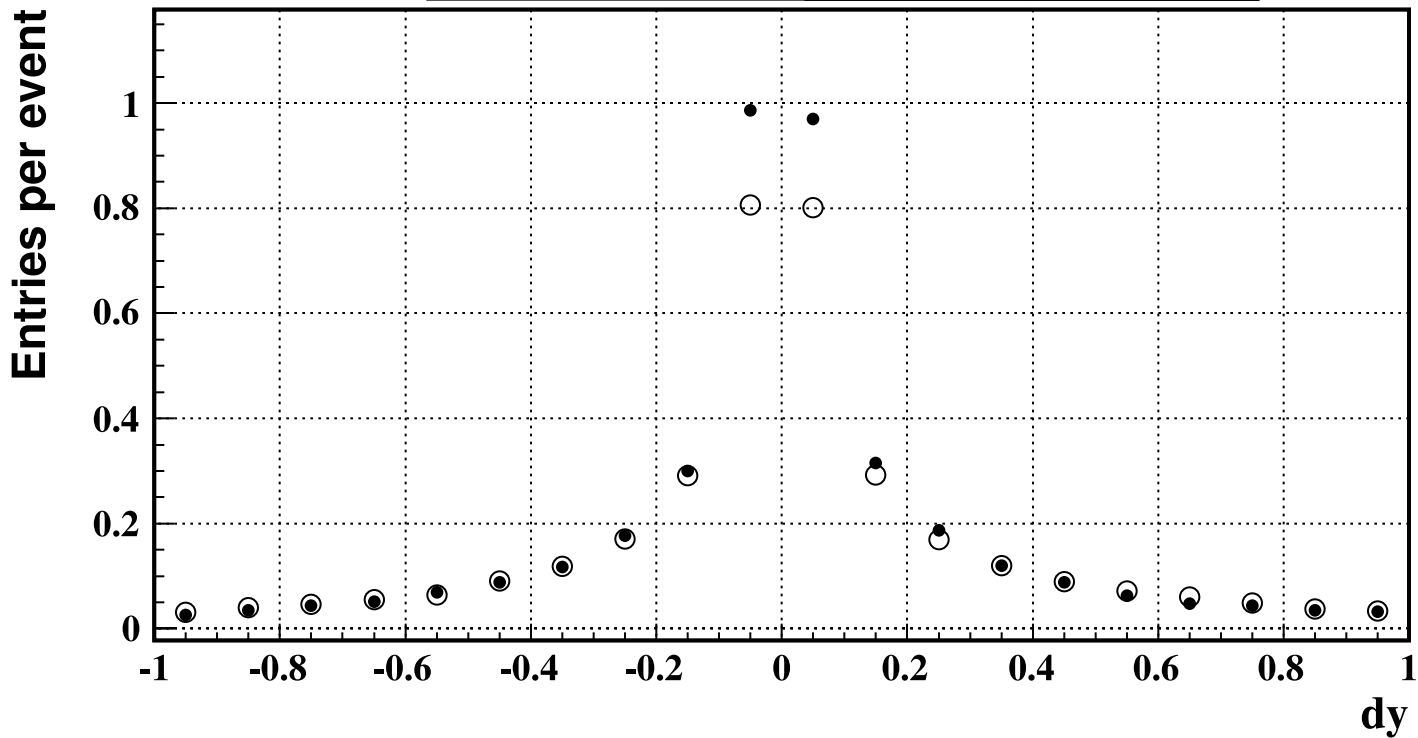


100 GeV Primary π^+
Secondary π^+

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	37937	Entries	34391
Mean	0.00157	Mean	0.00232
RMS	0.298	RMS	0.324
Underflow	0	Underflow	0
Overflow	0	Overflow	0

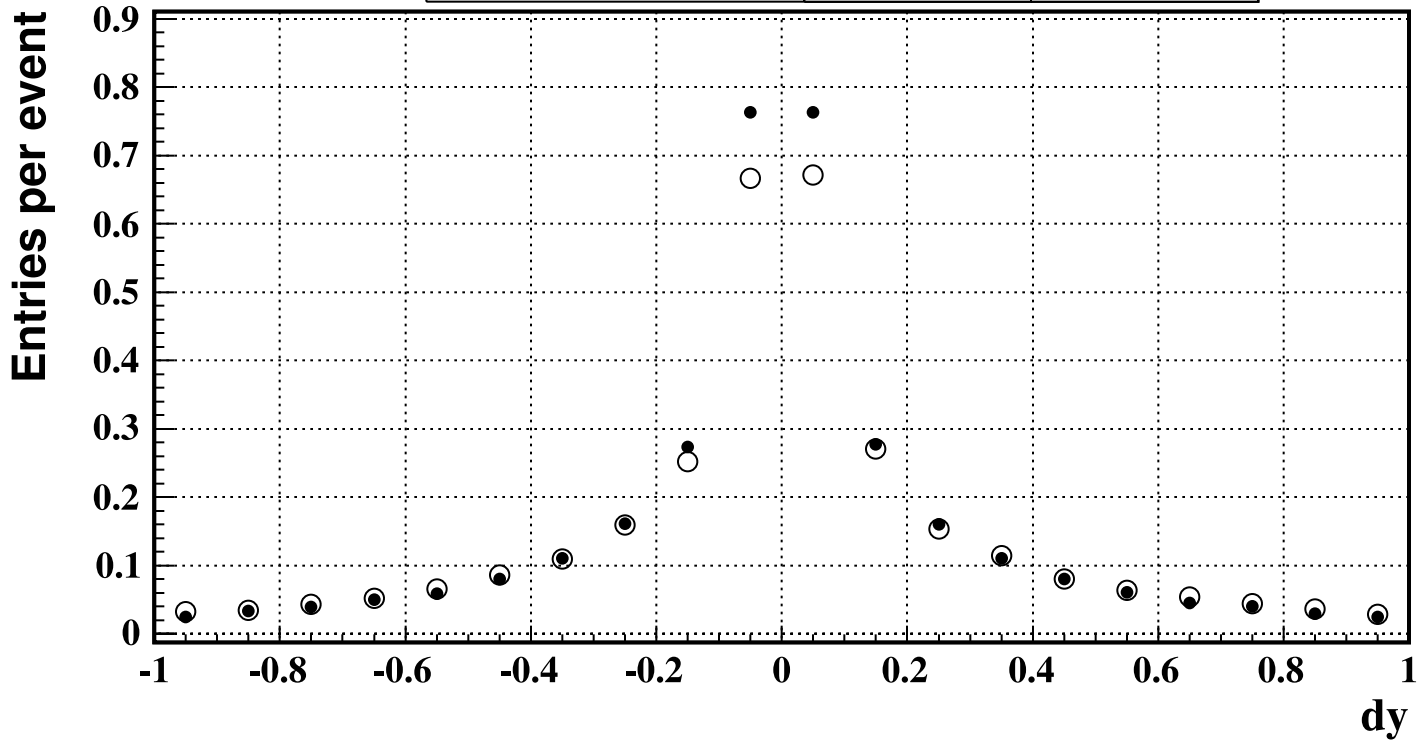


100 GeV Primary π^+
Secondary π^-

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	31878	Entries	30175
Mean	-0.00154	Mean	0.000158
RMS	0.31	RMS	0.332
Underflow	0	Underflow	0
Overflow	0	Overflow	0

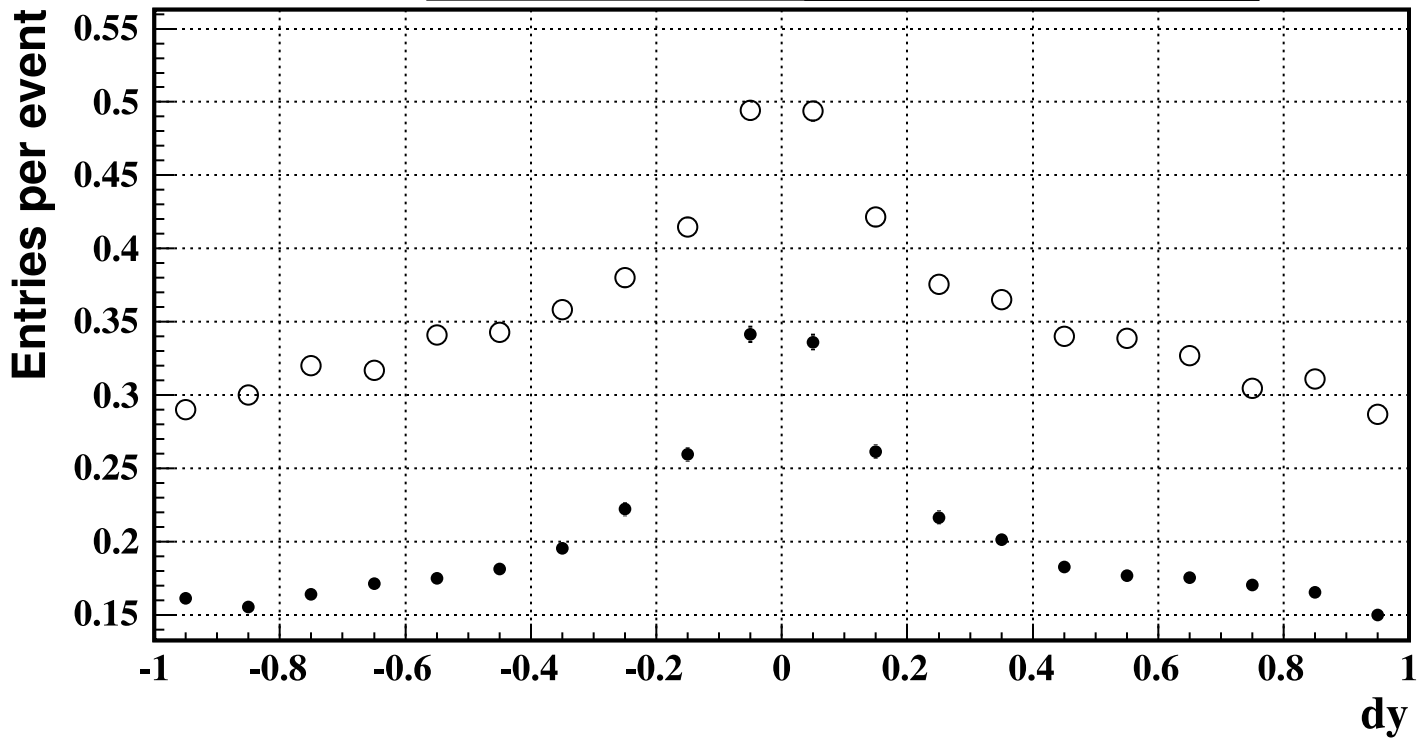


100 GeV Primary π^+
Secondary n

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	40626	Entries	71220
Mean	0.00201	Mean	0.000279
RMS	0.525	RMS	0.542
Underflow	0	Underflow	0
Overflow	0	Overflow	0

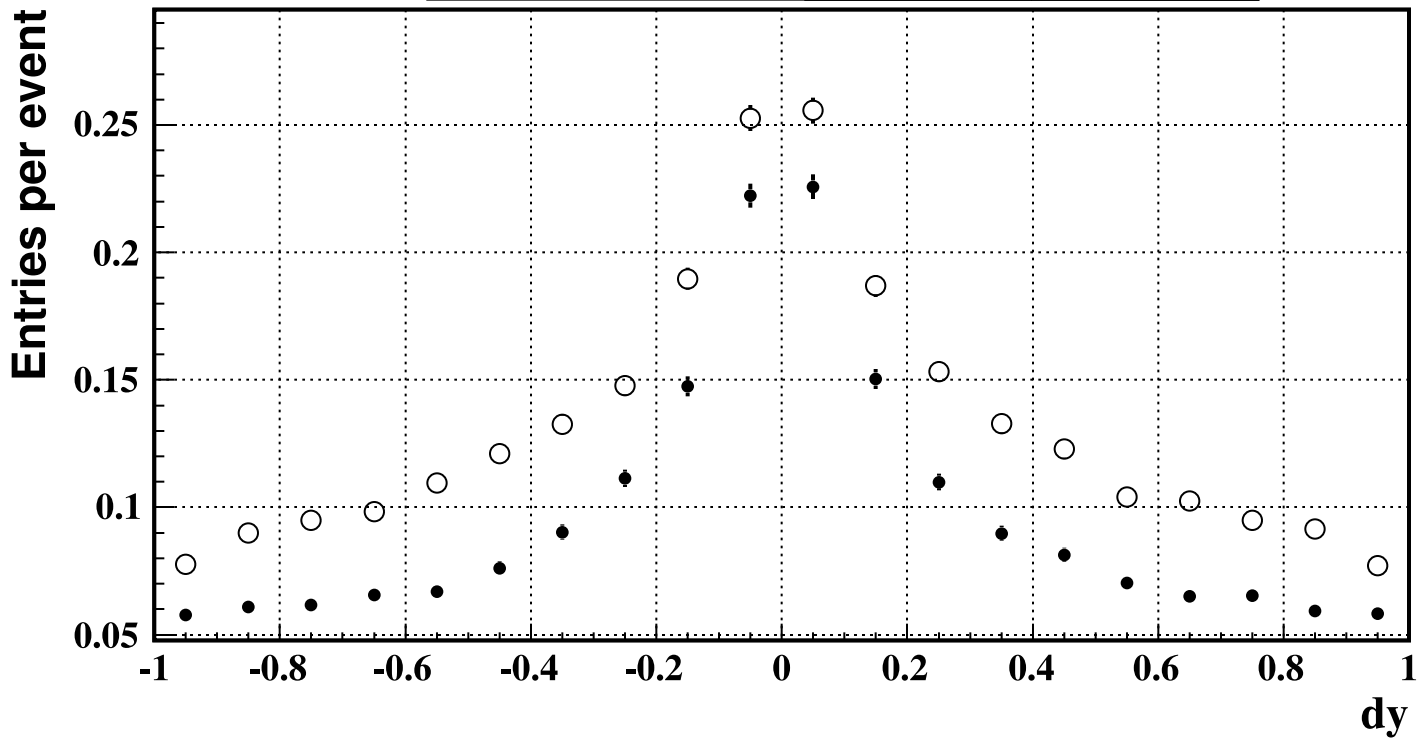


100 GeV Primary π^+
Secondary p

• **GEANT4**

○ **GEANT3**

GEANT4		GEANT3	
Entries	19358	Entries	26354
Mean	0.0031	Mean	0.00127
RMS	0.474	RMS	0.492
Underflow	0	Underflow	0
Overflow	0	Overflow	0

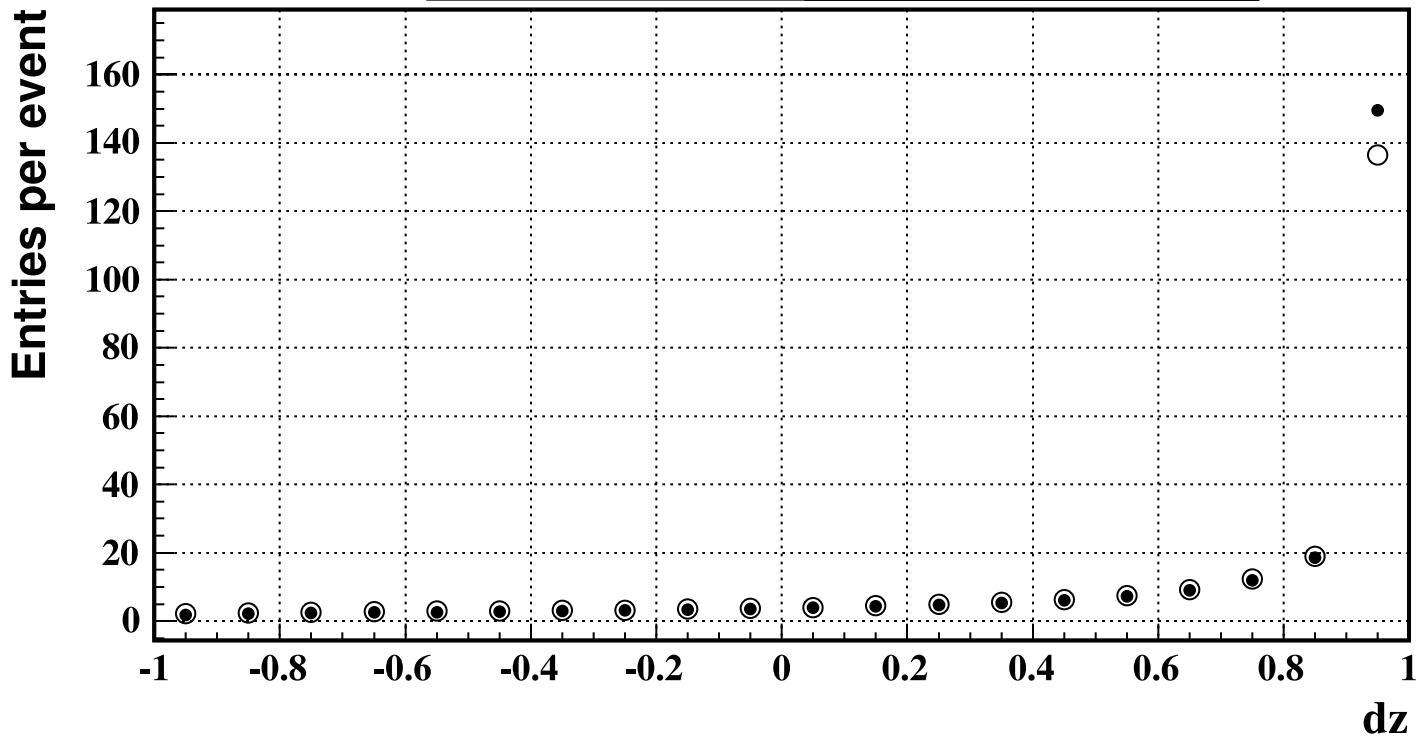


100 GeV Primary π^+
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	2475030	Entries	2392163
Mean	0.713	Mean	0.683
RMS	0.473	RMS	0.494
Underflow	0	Underflow	0
Overflow	0	Overflow	0.0015



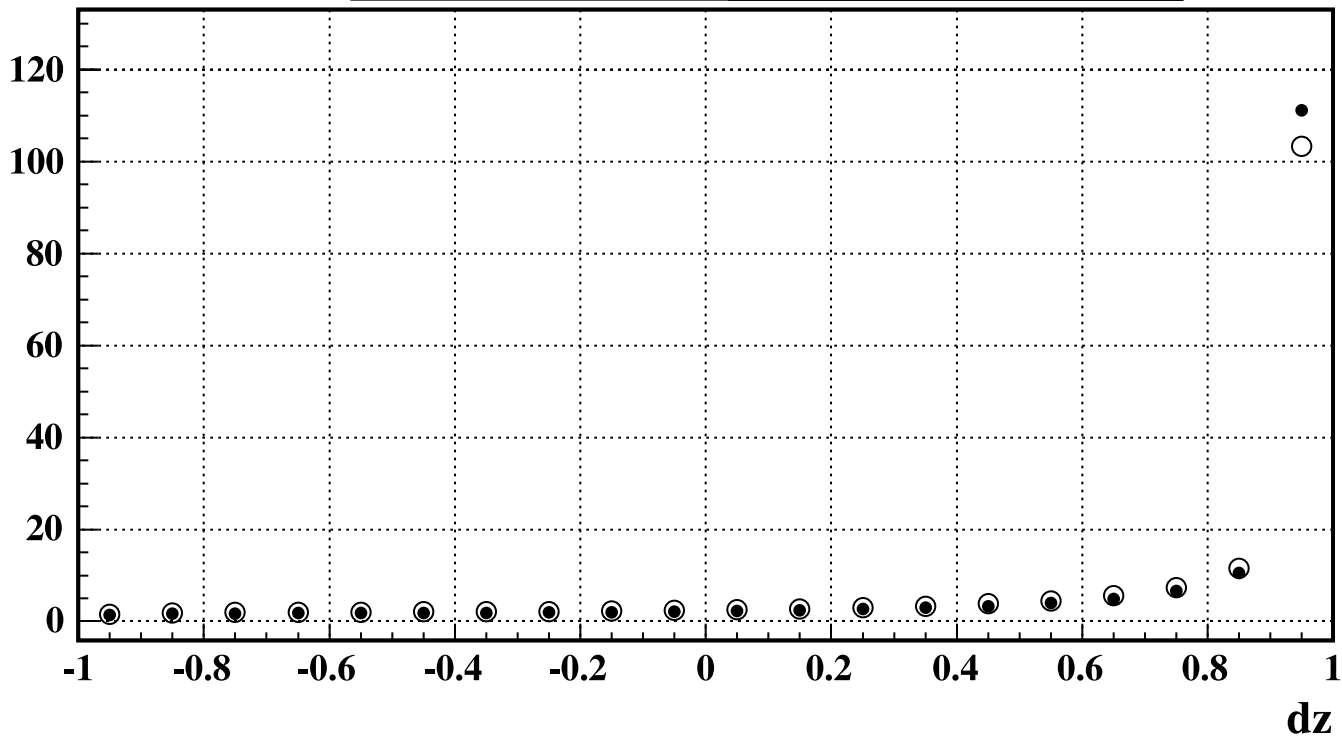
100 GeV Primary π^+
Secondary γ

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	1684304	Entries	1675636
Mean	0.738	Mean	0.703
RMS	0.475	RMS	0.497
Underflow	0	Underflow	0
Overflow	0	Overflow	0.0004

Entries per event

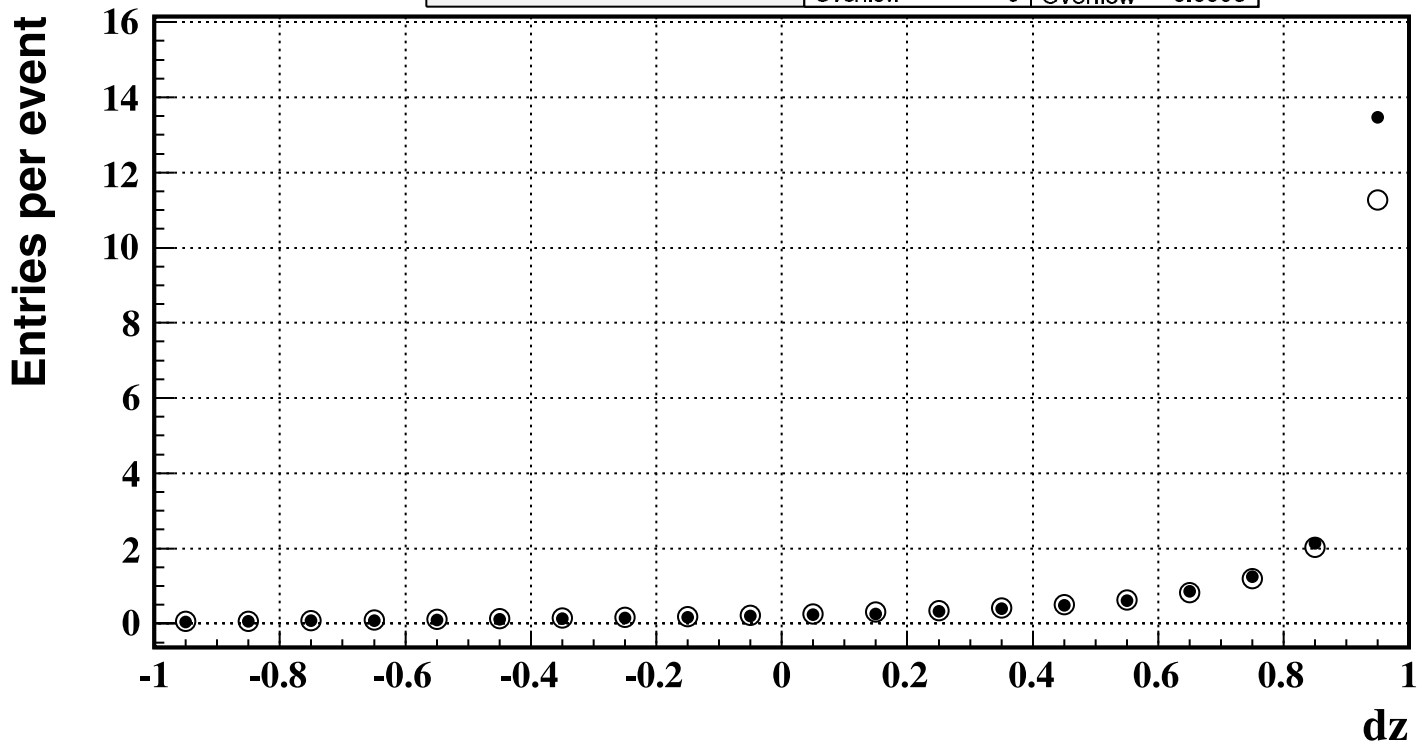


100 GeV Primary π^+
Secondary e^+

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	211033	Entries	189921
Mean	0.801	Mean	0.767
RMS	0.35	RMS	0.379
Underflow	0	Underflow	0
Overflow	0	Overflow	0.0006



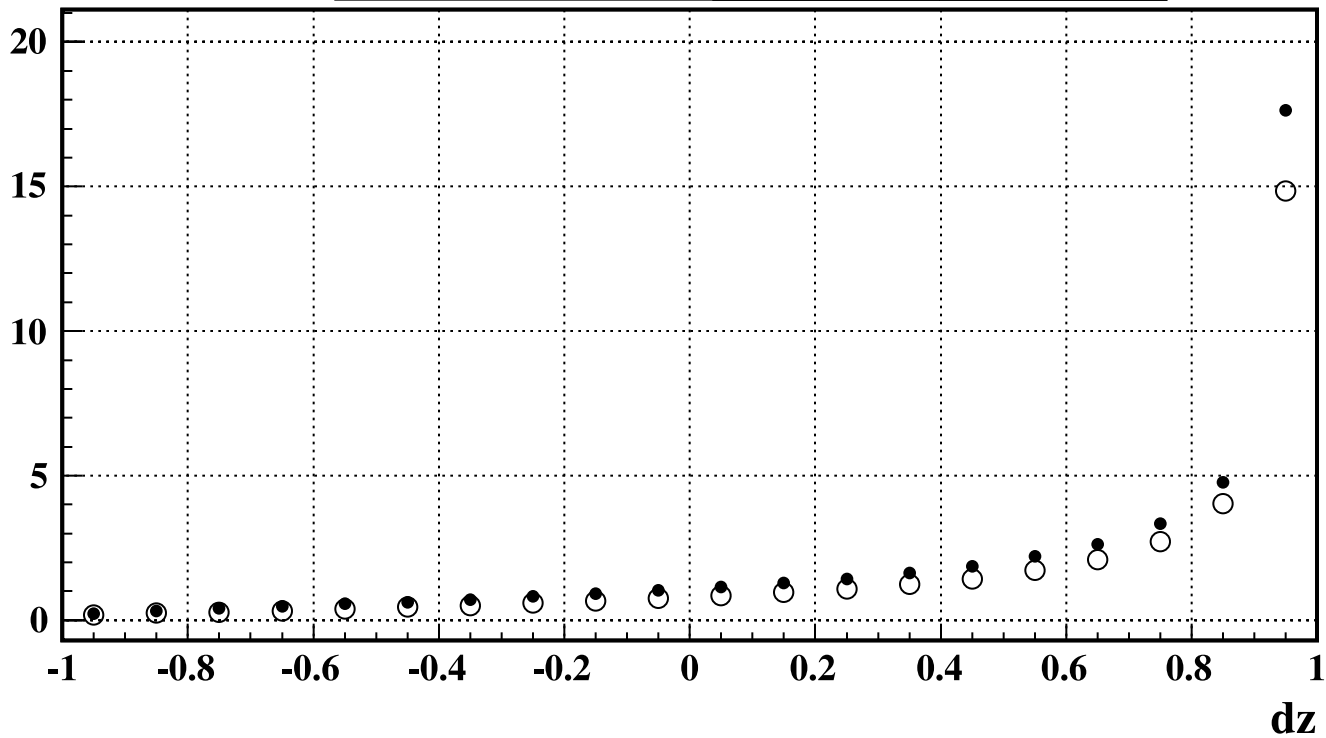
100 GeV Primary π^+
Secondary e^-

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	440552	Entries	353463
Mean	0.599	Mean	0.625
RMS	0.479	RMS	0.465
Underflow	0	Underflow	0
Overflow	0	Overflow	0.0005

Entries per event



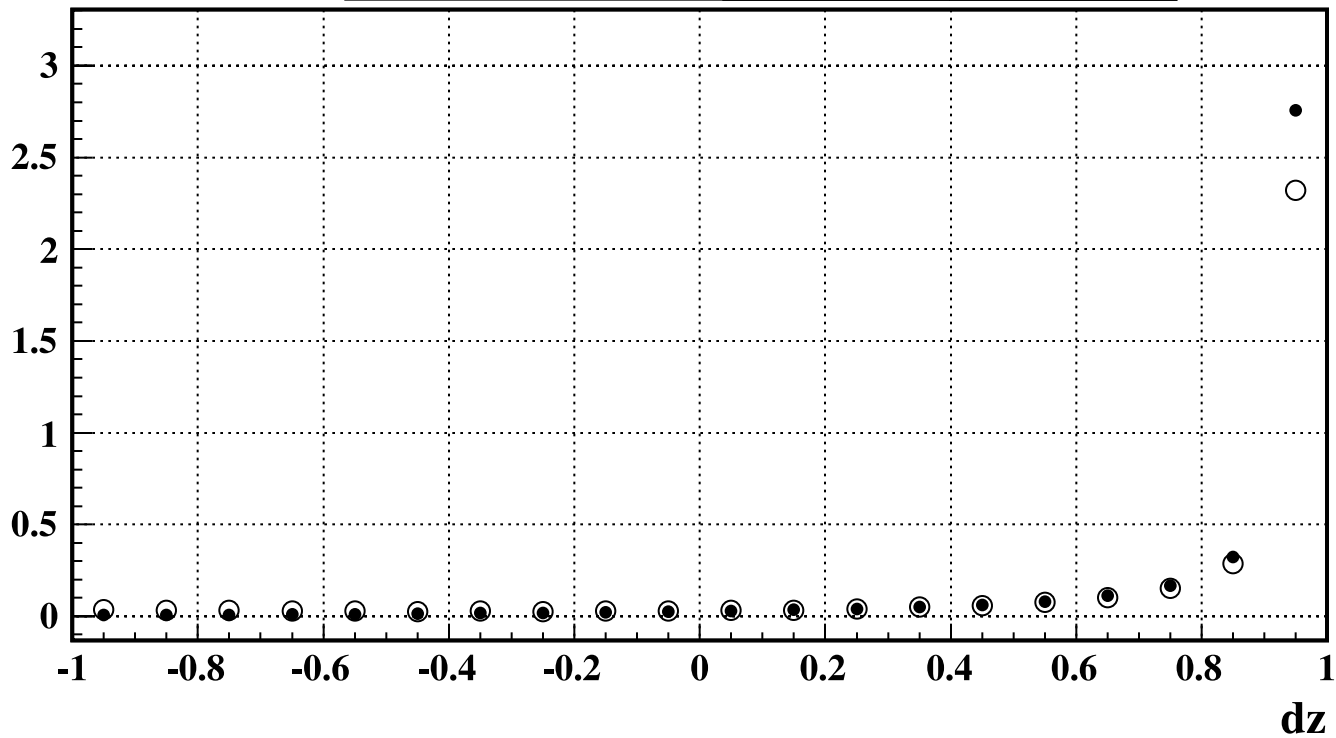
100 GeV Primary π^+
Secondary π^+

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	37937	Entries	34391
Mean	0.853	Mean	0.771
RMS	0.31	RMS	0.445
Underflow	0	Underflow	0
Overflow	0	Overflow	0

Entries per event

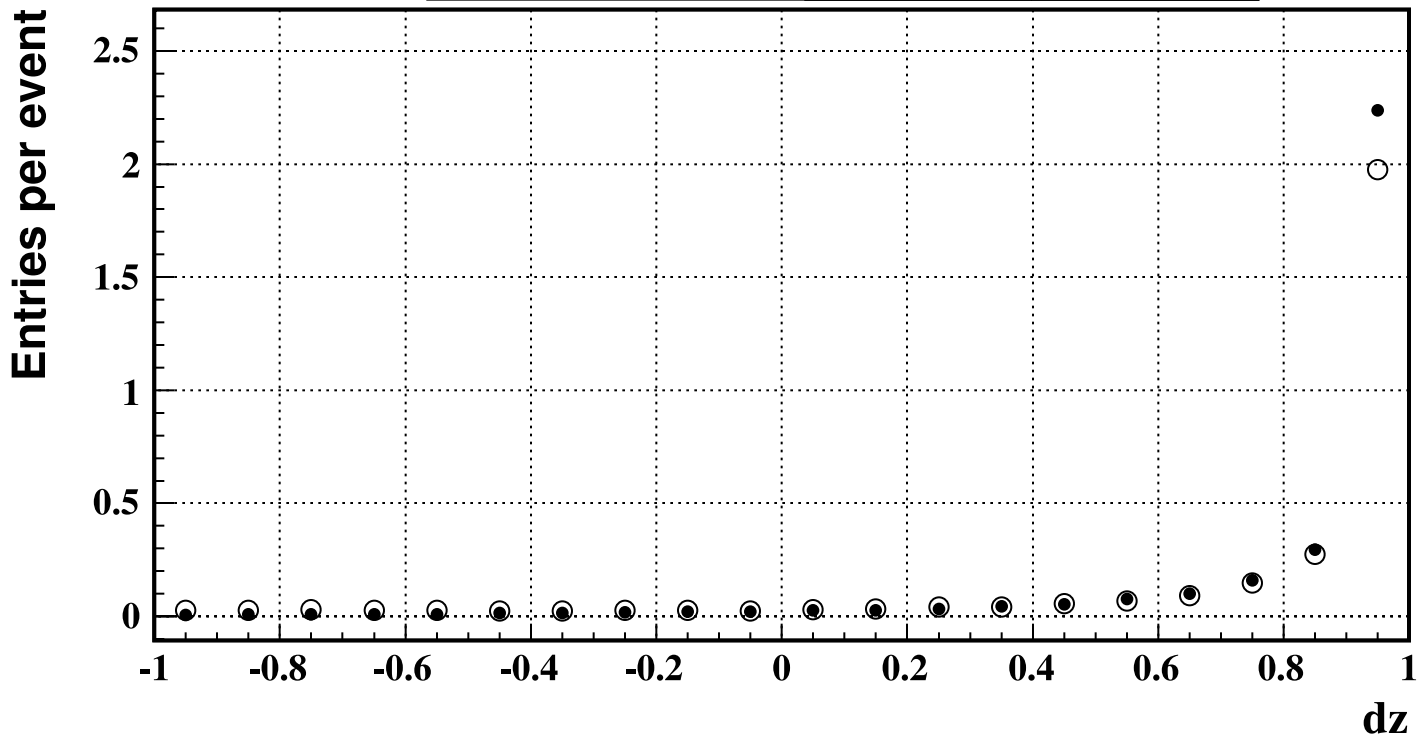


100 GeV Primary π^+
Secondary π^-

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	31878	Entries	30175
Mean	0.84	Mean	0.764
RMS	0.322	RMS	0.444
Underflow	0	Underflow	0
Overflow	0	Overflow	0

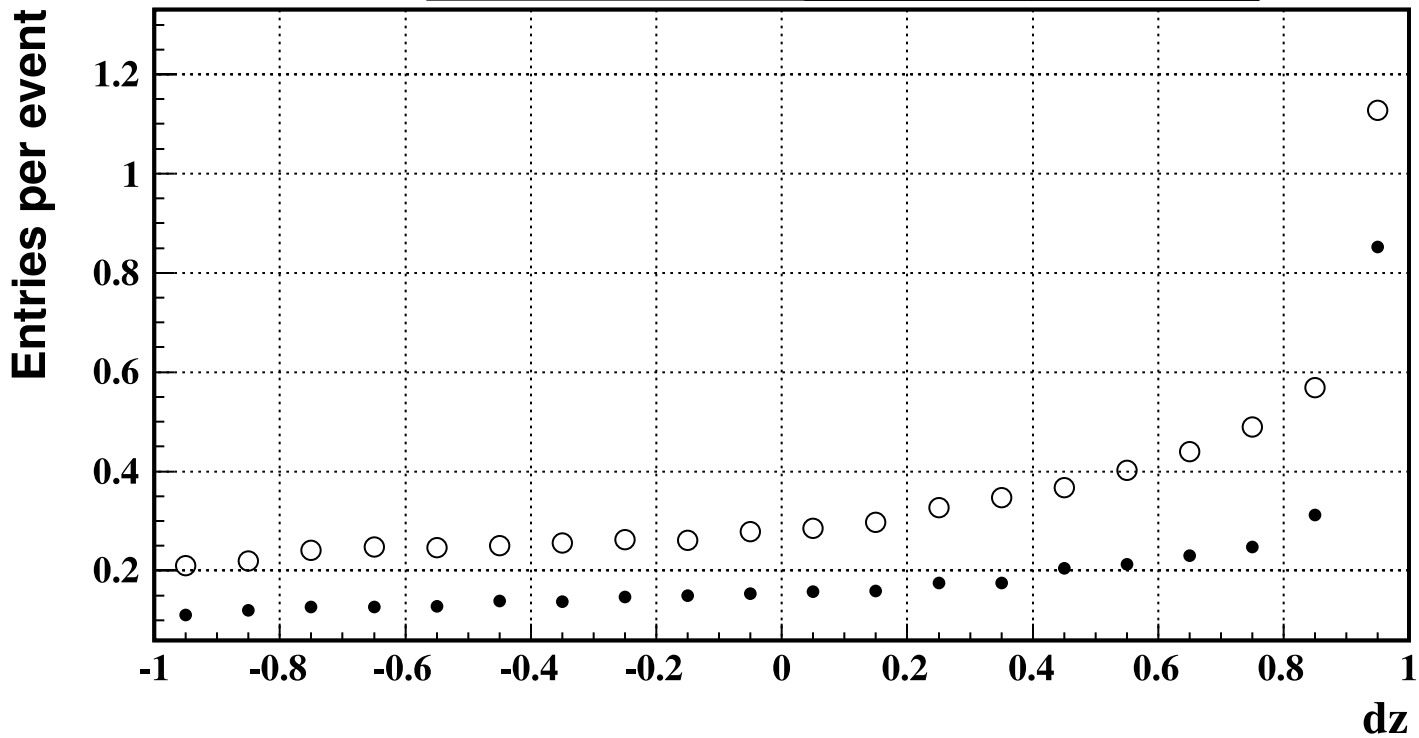


100 GeV Primary π^+
Secondary n

• **GEANT4**

○ **GEANT3**

GEANT4		GEANT3	
Entries	40626	Entries	71220
Mean	0.281	Mean	0.237
RMS	0.607	RMS	0.6
Underflow	0	Underflow	0
Overflow	0	Overflow	0

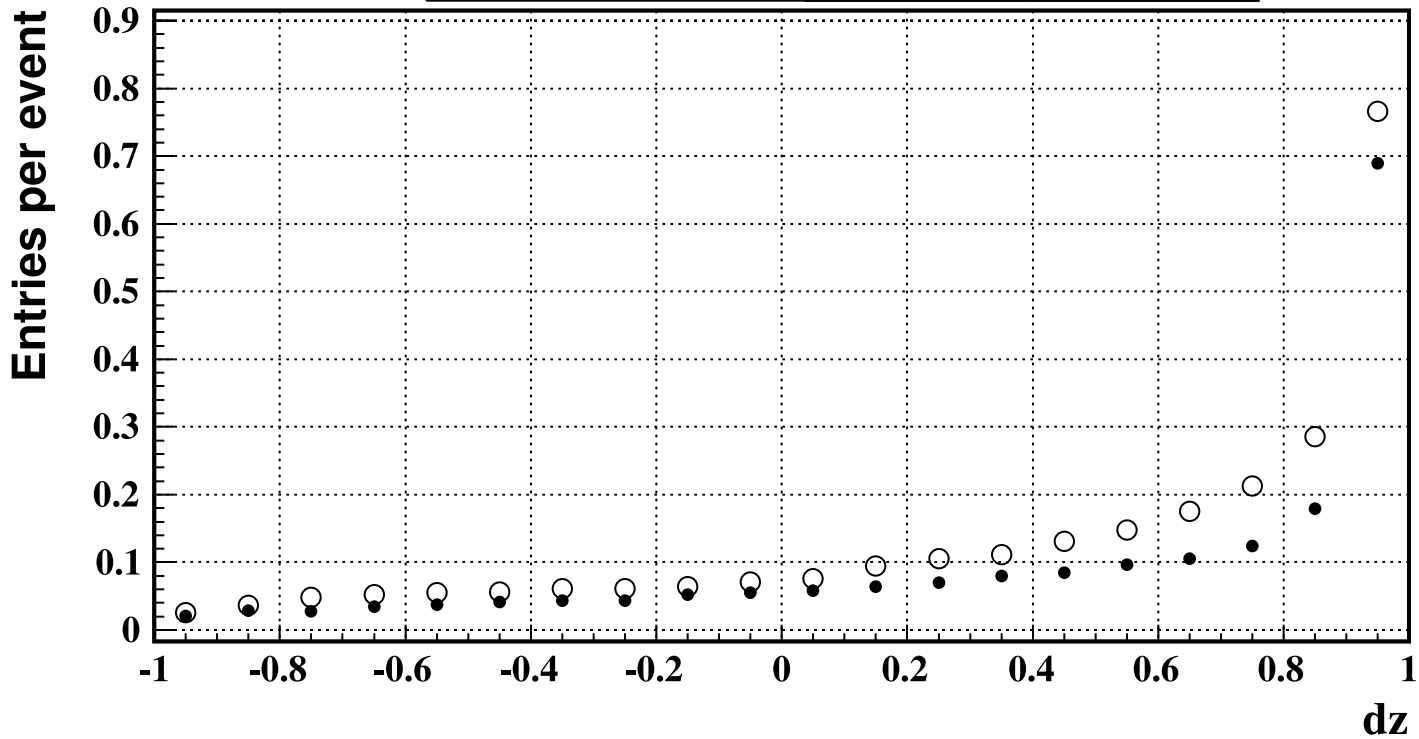


100 GeV Primary π^+
Secondary p

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	19358	Entries	26354
Mean	0.503	Mean	0.476
RMS	0.543	RMS	0.537
Underflow	0	Underflow	0
Overflow	0	Overflow	0

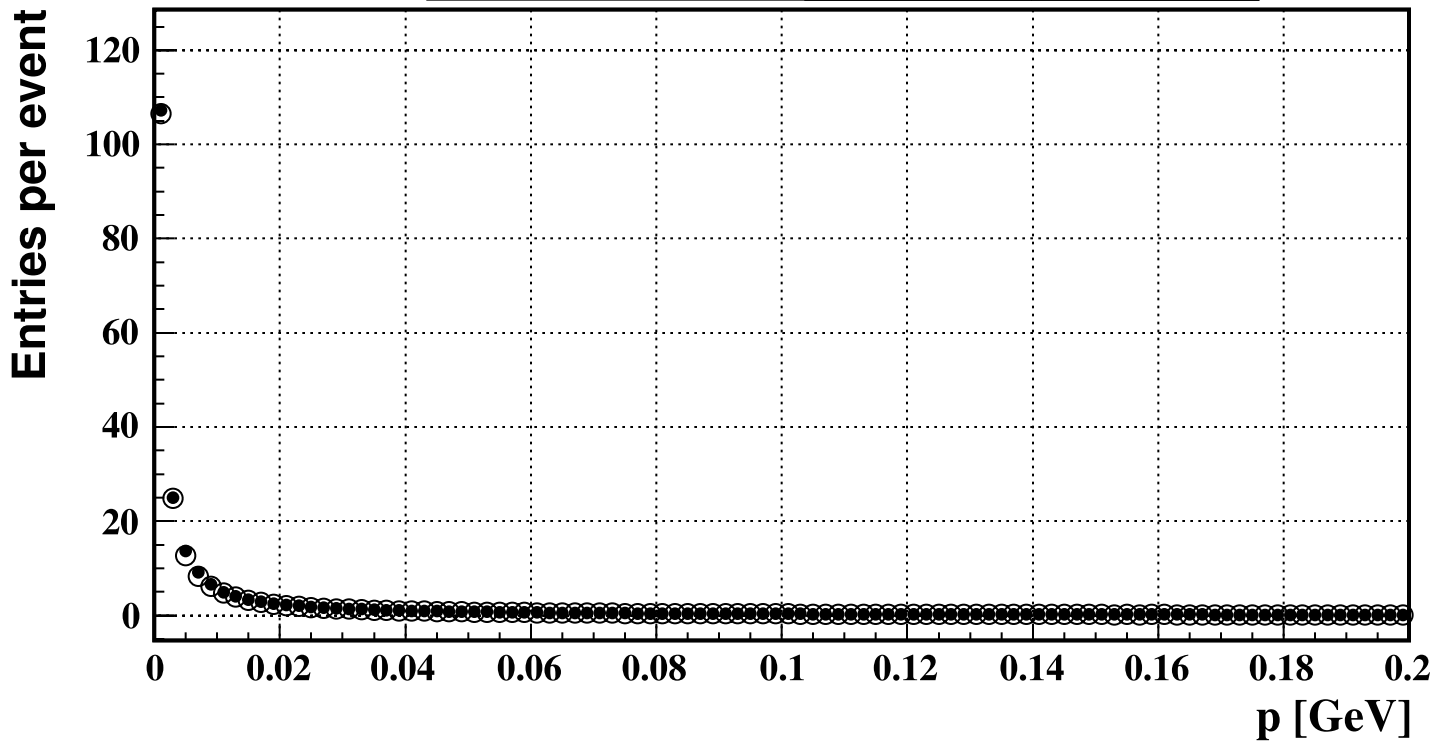


100 GeV Primary π^+
Secondary

• GEANT4

○ GEANT3

GEANT4		GEANT3	
Entries	2475030	Entries	2392163
Mean	0.0157	Mean	0.0154
RMS	0.0331	RMS	0.033
Underflow	0	Underflow	0
Overflow	26.5	Overflow	23.8

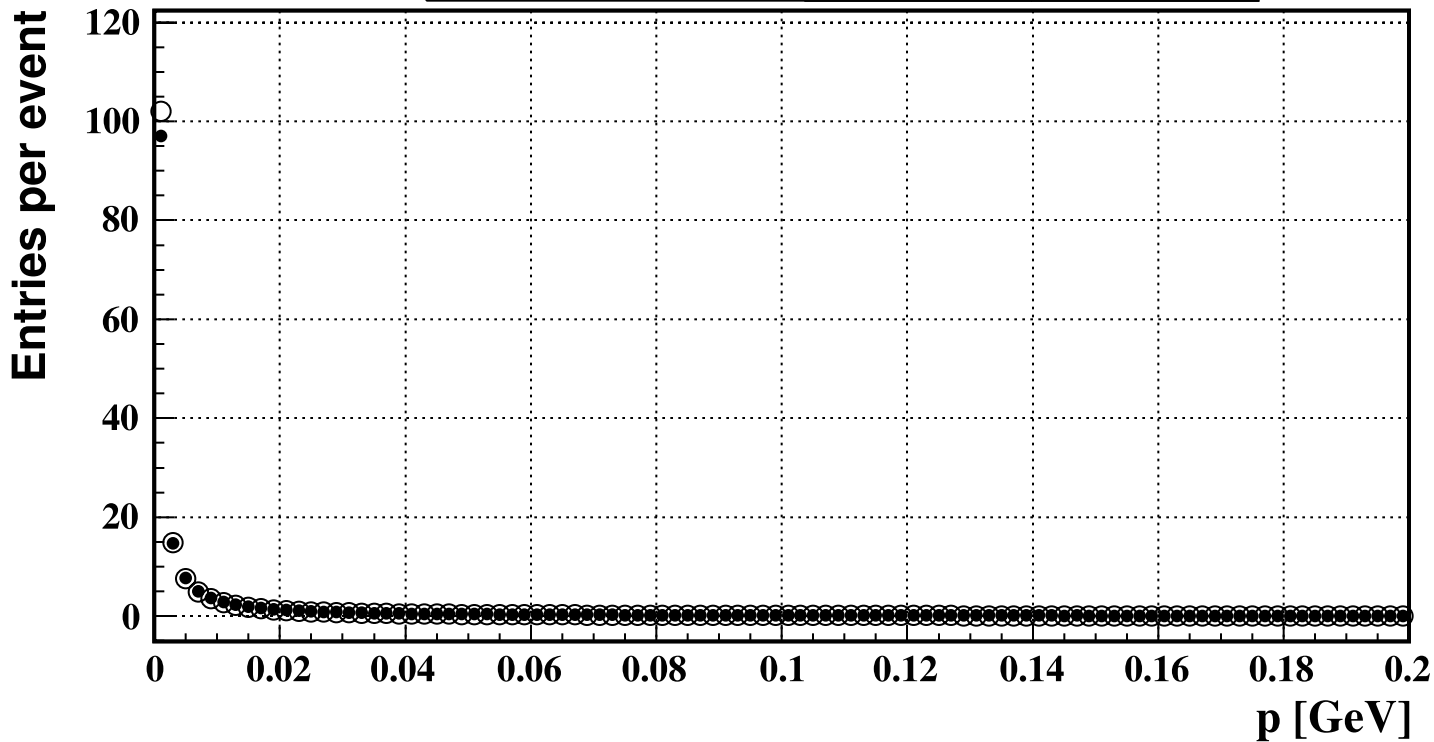


100 GeV Primary π^+
Secondary γ

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	1684304	1675636
Mean	0.011	0.00958
RMS	0.0278	0.0257
Underflow	0	0
Overflow	9.66	7.35



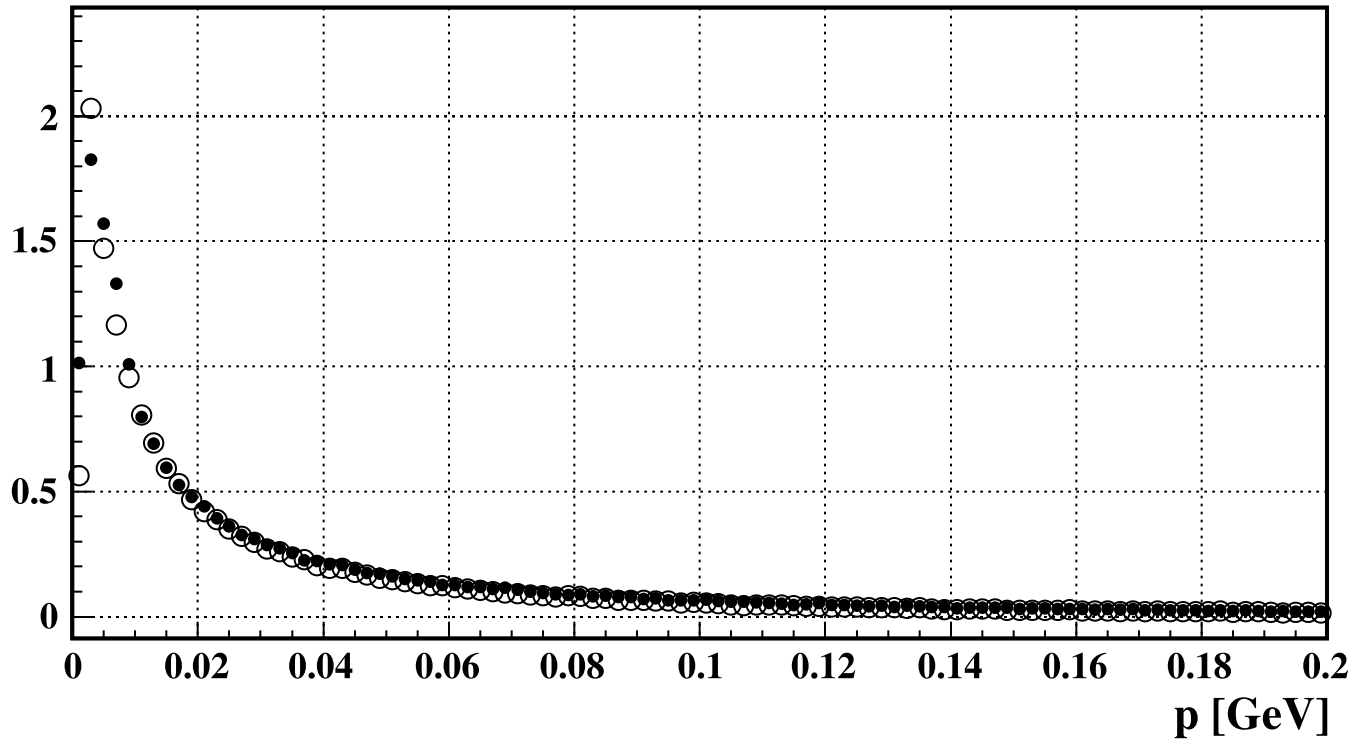
100 GeV Primary π^+
Secondary e^+

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	211033	Entries	189921
Mean	0.0355	Mean	0.0338
RMS	0.0429	RMS	0.041
Underflow	0	Underflow	0
Overflow	2.85	Overflow	2.07

Entries per event



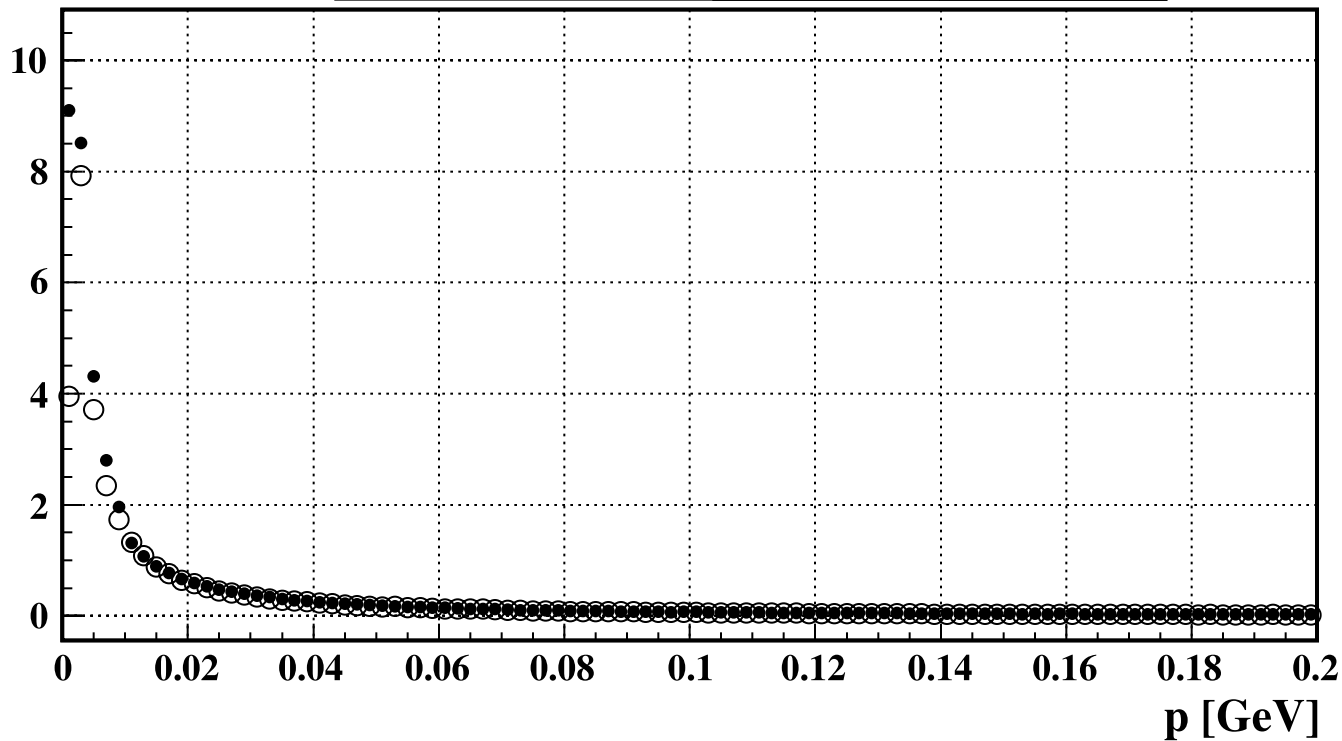
100 GeV Primary π^+
Secondary e^-

• GEANT4

○ GEANT3

	GEANT4		GEANT3
Entries	440552	Entries	353463
Mean	0.0193	Mean	0.0211
RMS	0.0335	RMS	0.0336
Underflow	0	Underflow	0
Overflow	2.89	Overflow	2.11

Entries per event

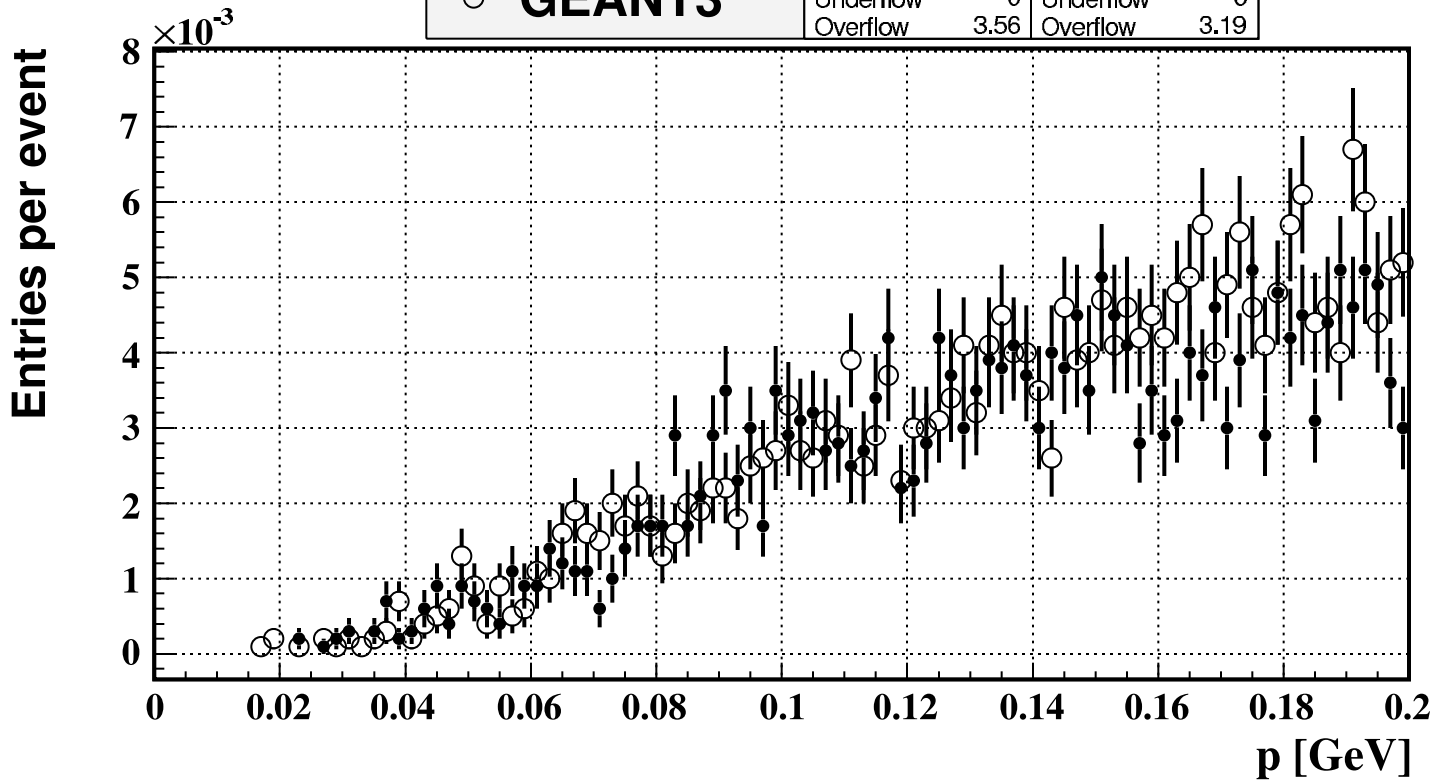


100 GeV Primary π^+
Secondary π^+

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	37937	34391
Mean	0.138	0.141
RMS	0.0405	0.0407
Underflow	0	0
Overflow	3.56	3.19

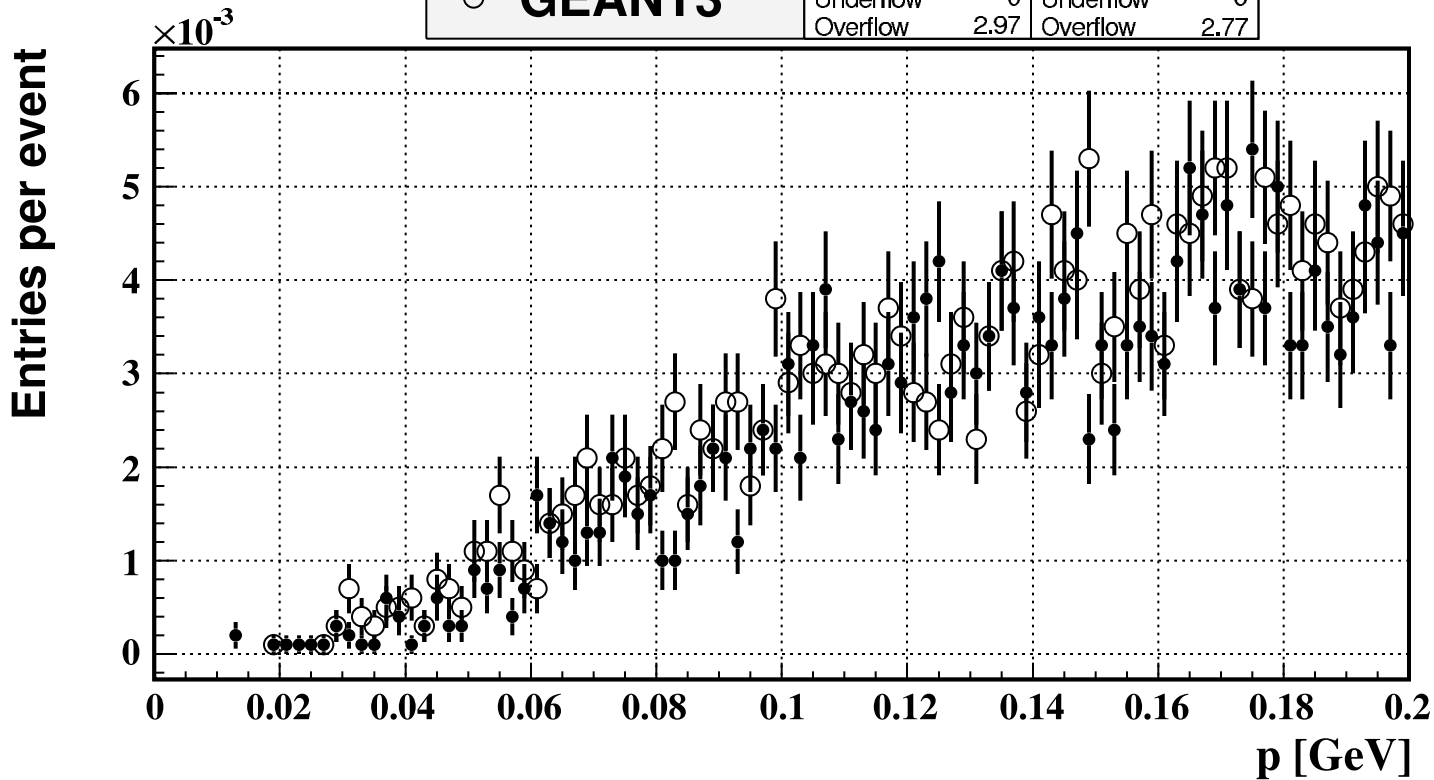


100 GeV Primary π^+
Secondary π^-

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	31878	30175
Mean	0.139	0.137
RMS	0.0406	0.042
Underflow	0	0
Overflow	2.97	2.77

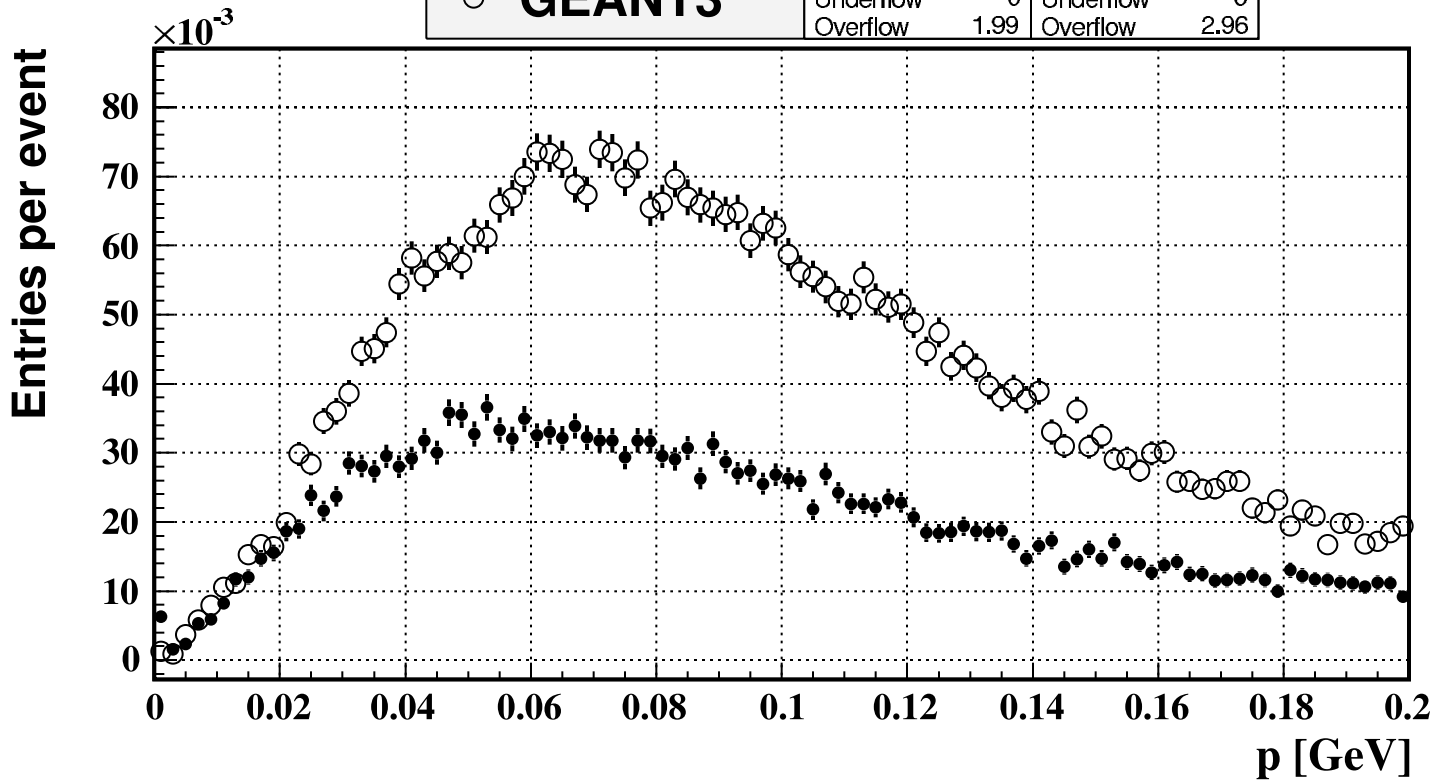


100 GeV Primary π^+
Secondary n

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	40626	71220
Mean	0.0905	0.0942
RMS	0.0486	0.0455
Underflow	0	0
Overflow	1.99	2.96

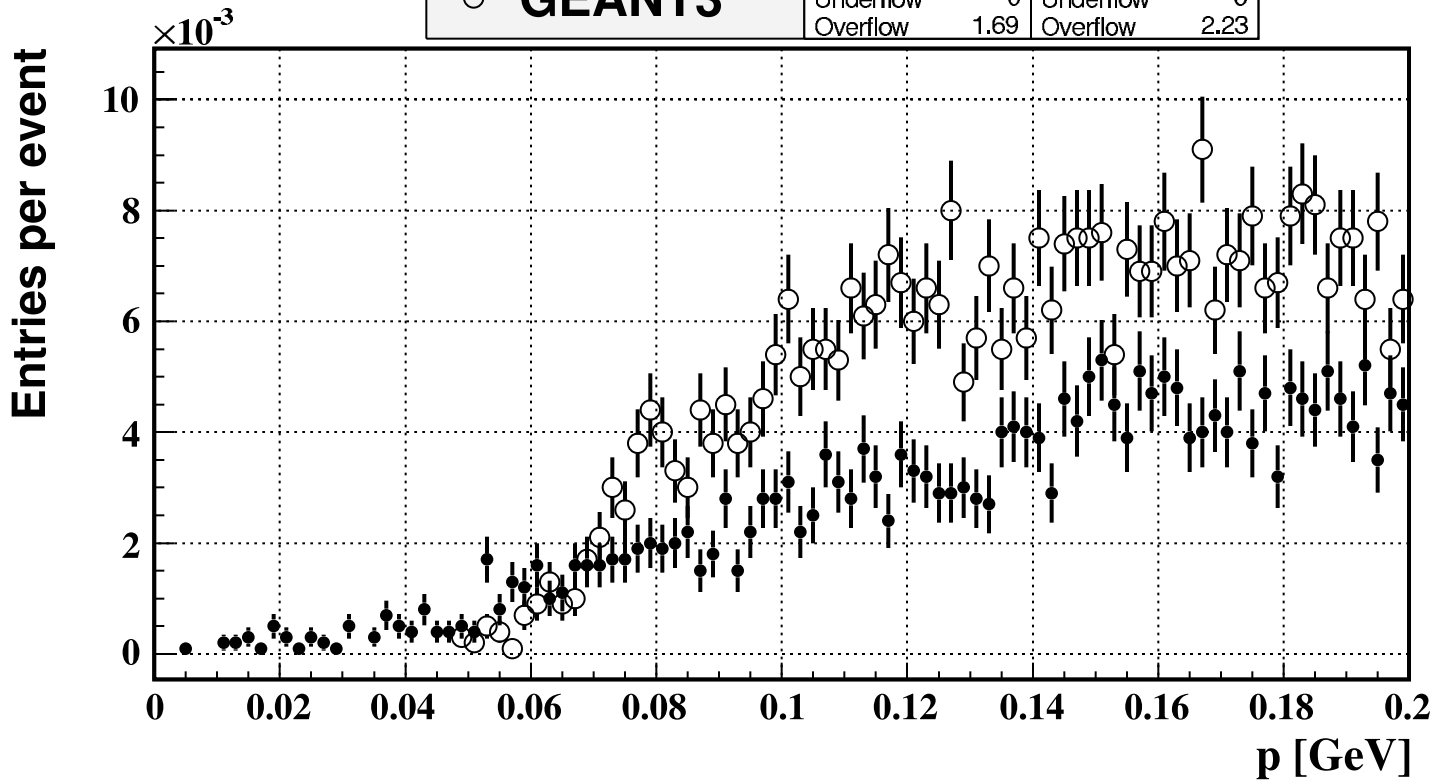


100 GeV Primary π^+
Secondary p

• GEANT4

○ GEANT3

	GEANT4	GEANT3
Entries	19358	26354
Mean	0.138	0.141
RMS	0.0423	0.0364
Underflow	0	0
Overflow	1.69	2.23

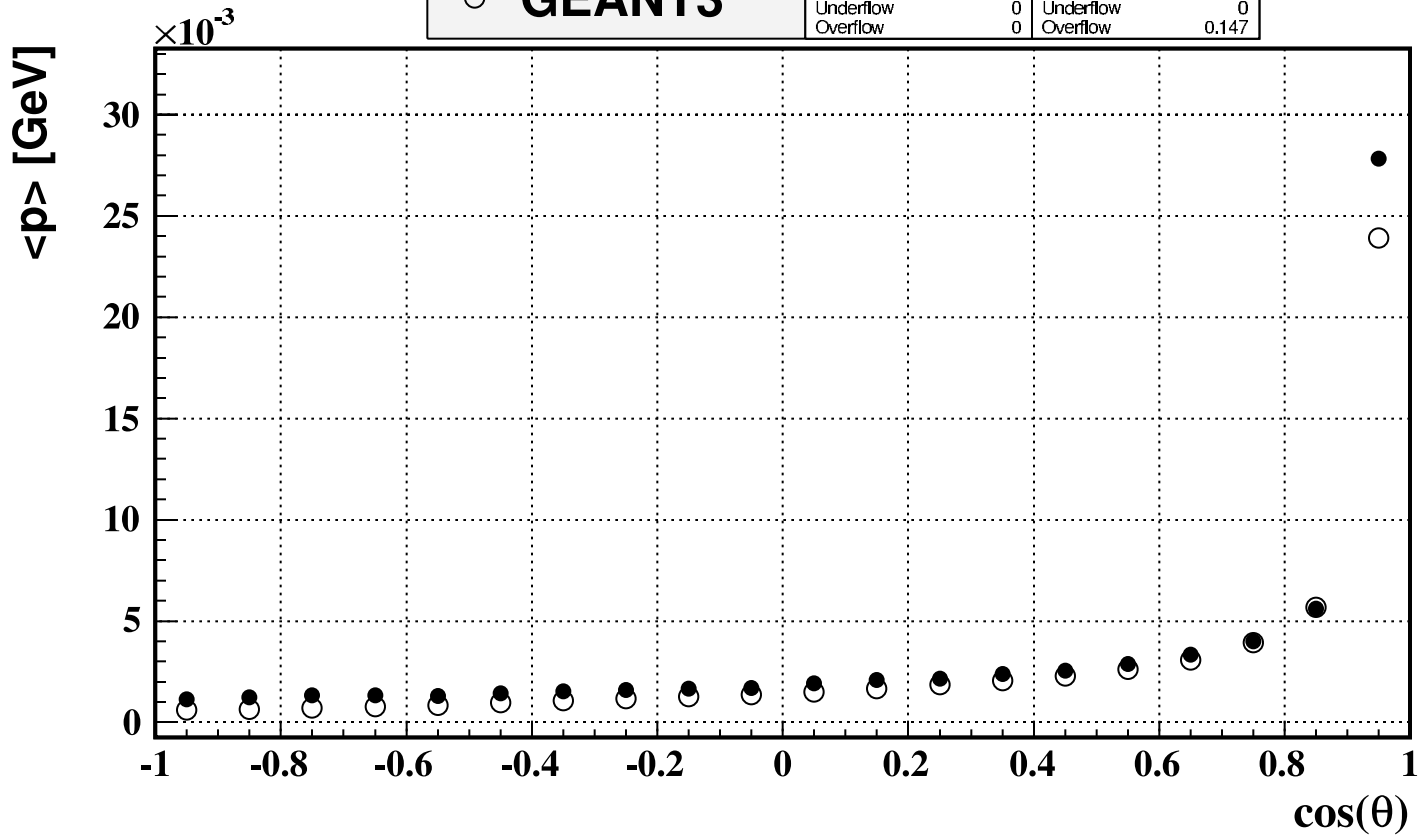


100 GeV Primary γ
Secondary

● GEANT4

○ GEANT3

GEANT4_pfx		GEANT3_pfx	
Entries	5214884	Entries	5274786
Mean	0.678	Mean	0.664
Mean y	0.0173	Mean y	0.0146
RMS	0.466	RMS	0.477
RMS y	0.0973	RMS y	0.048
Underflow	0	Underflow	0
Overflow	0	Overflow	0.147

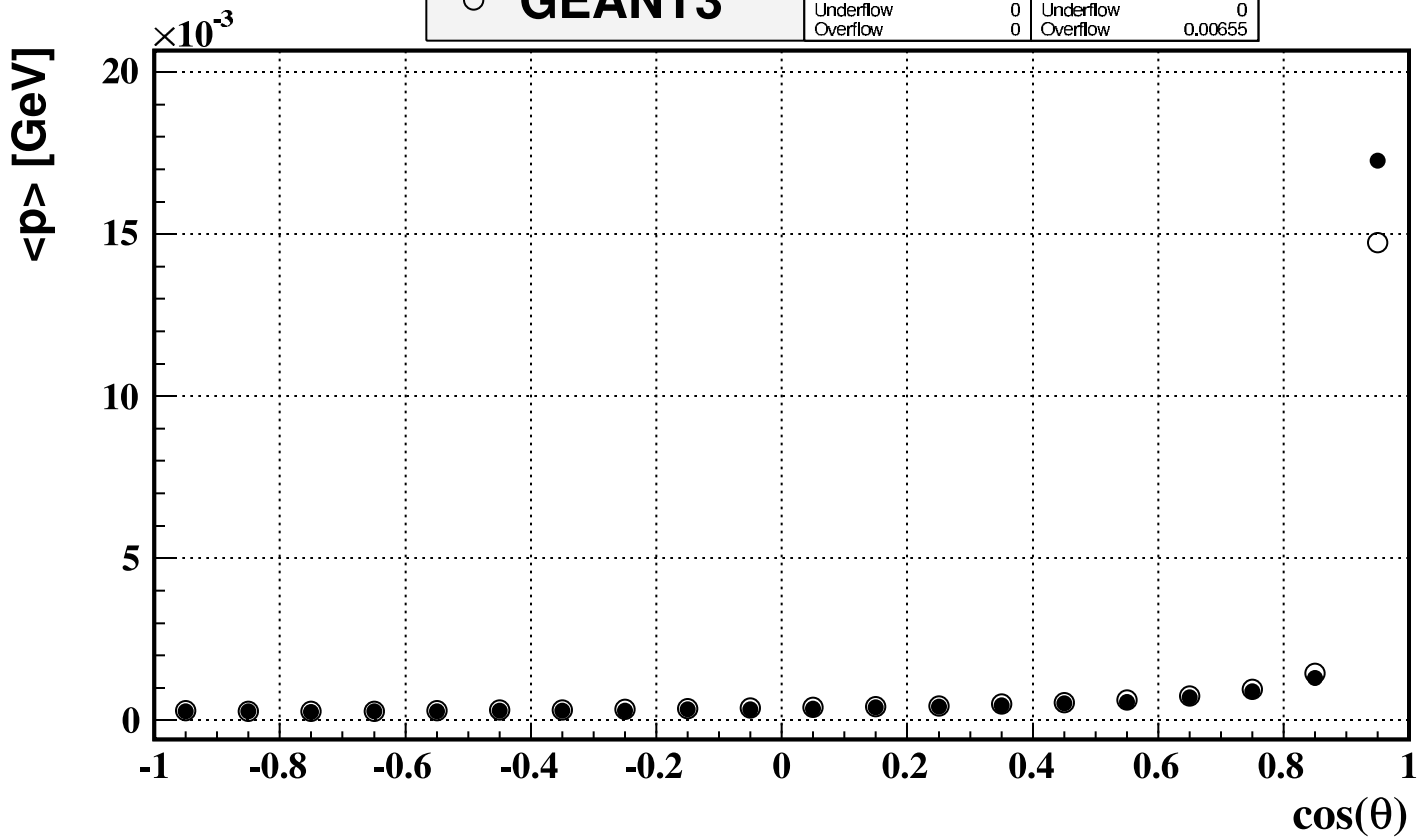


100 GeV Primary γ
Secondary γ

● GEANT4

○ GEANT3

GEANT4_pfx		GEANT3_pfx	
Entries	3766386	Entries	4005133
Mean	0.694	Mean	0.67
Mean y	0.0111	Mean y	0.00906
RMS	0.473	RMS	0.488
RMS y	0.0895	RMS y	0.0388
Underflow	0	Underflow	0
Overflow	0	Overflow	0.00655

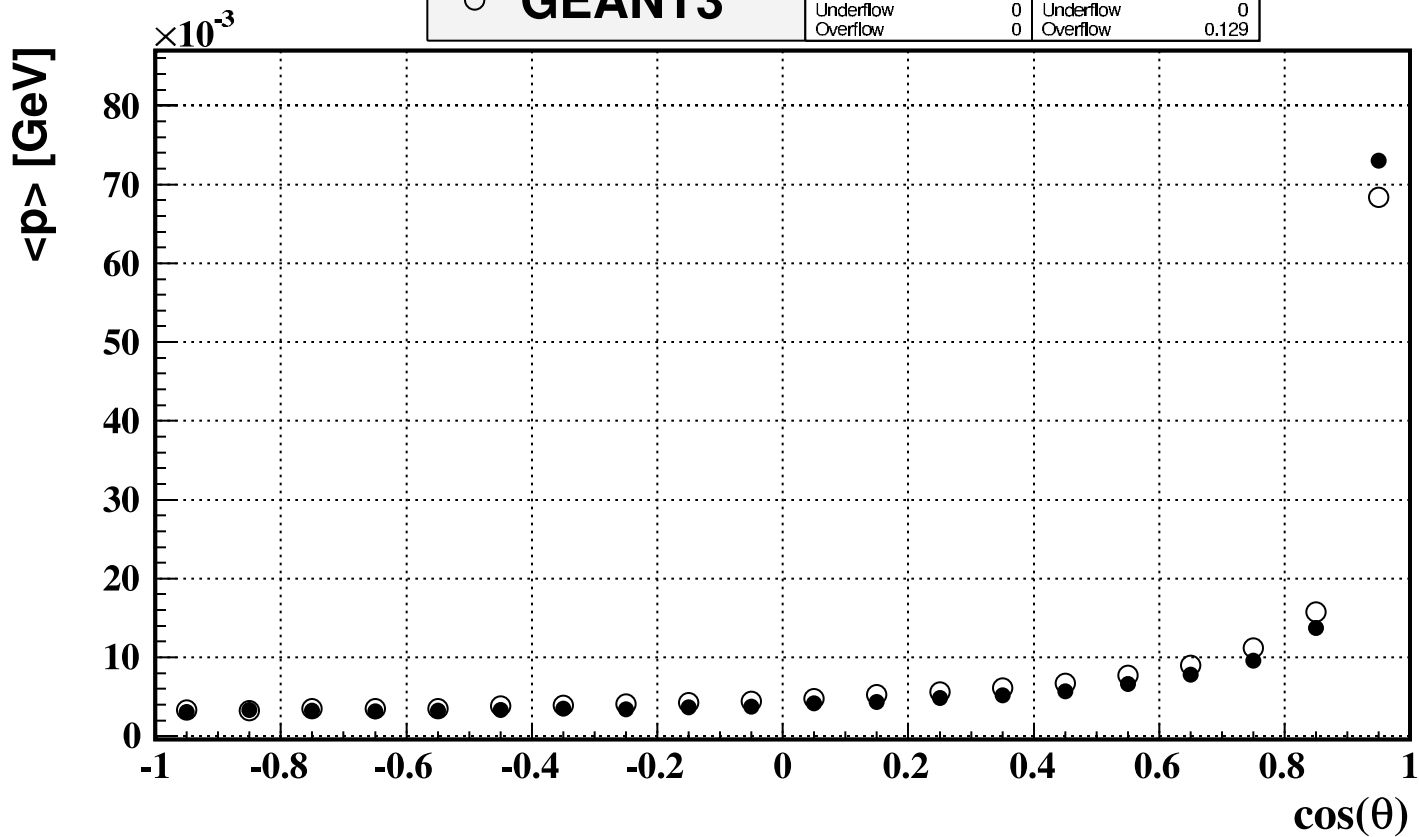


100 GeV Primary γ
Secondary e^+

● GEANT4

○ GEANT3

	GEANT4_pfx		GEANT3_pfx
Entries	503677	Entries	476162
Mean	0.742	Mean	0.712
Mean y	0.0444	Mean y	0.0403
RMS	0.368	RMS	0.394
RMS y	0.134	RMS y	0.0744
Underflow	0	Underflow	0
Overflow	0	Overflow	0.129

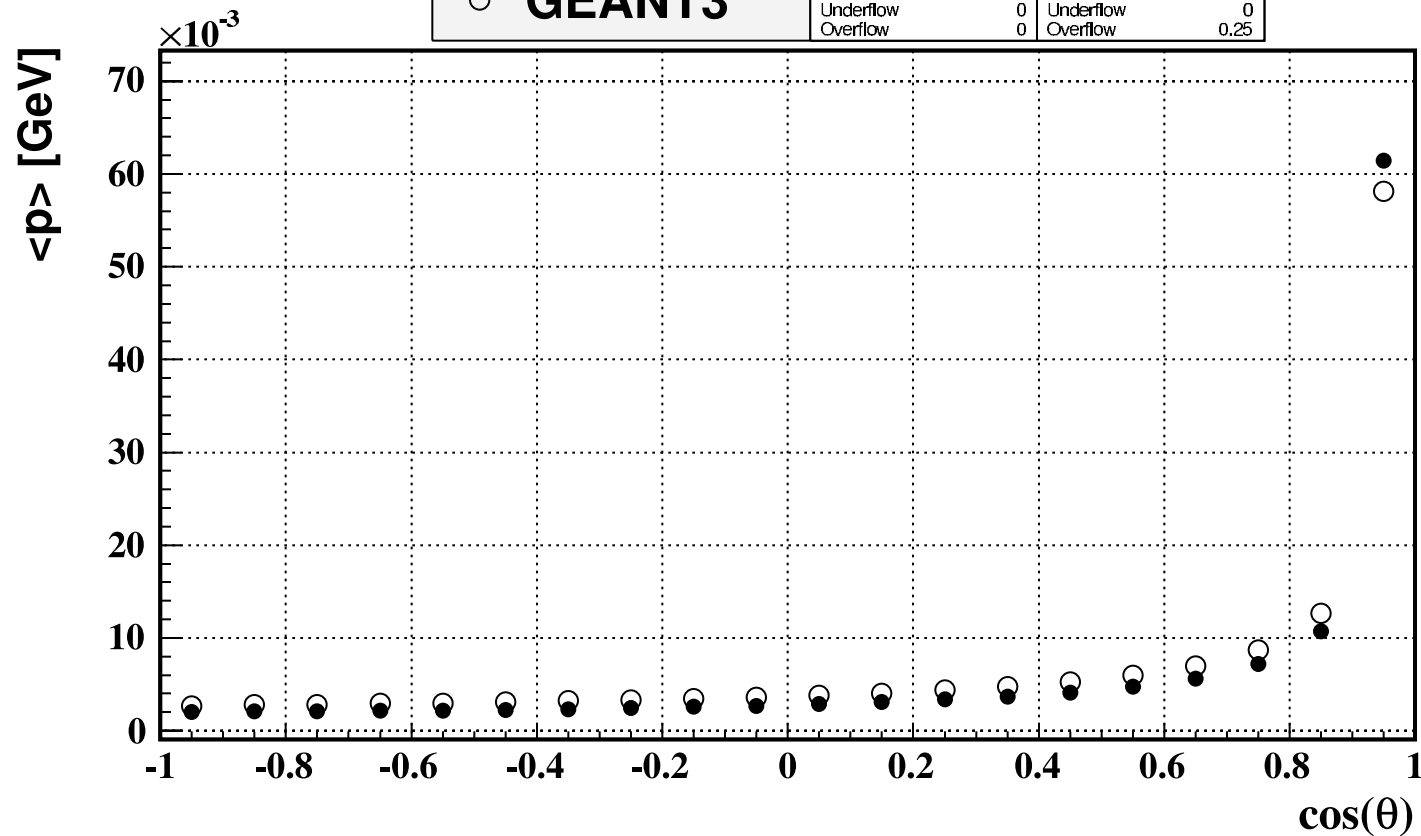


100 GeV Primary γ
Secondary e^-

● GEANT4

○ GEANT3

	GEANT4_pfx	GEANT3_pfx
Entries	937687	793491
Mean	0.584	0.604
Mean y	0.0267	0.0272
RMS	0.468	0.459
RMS y	0.085	0.0604
Underflow	0	0
Overflow	0	0.25

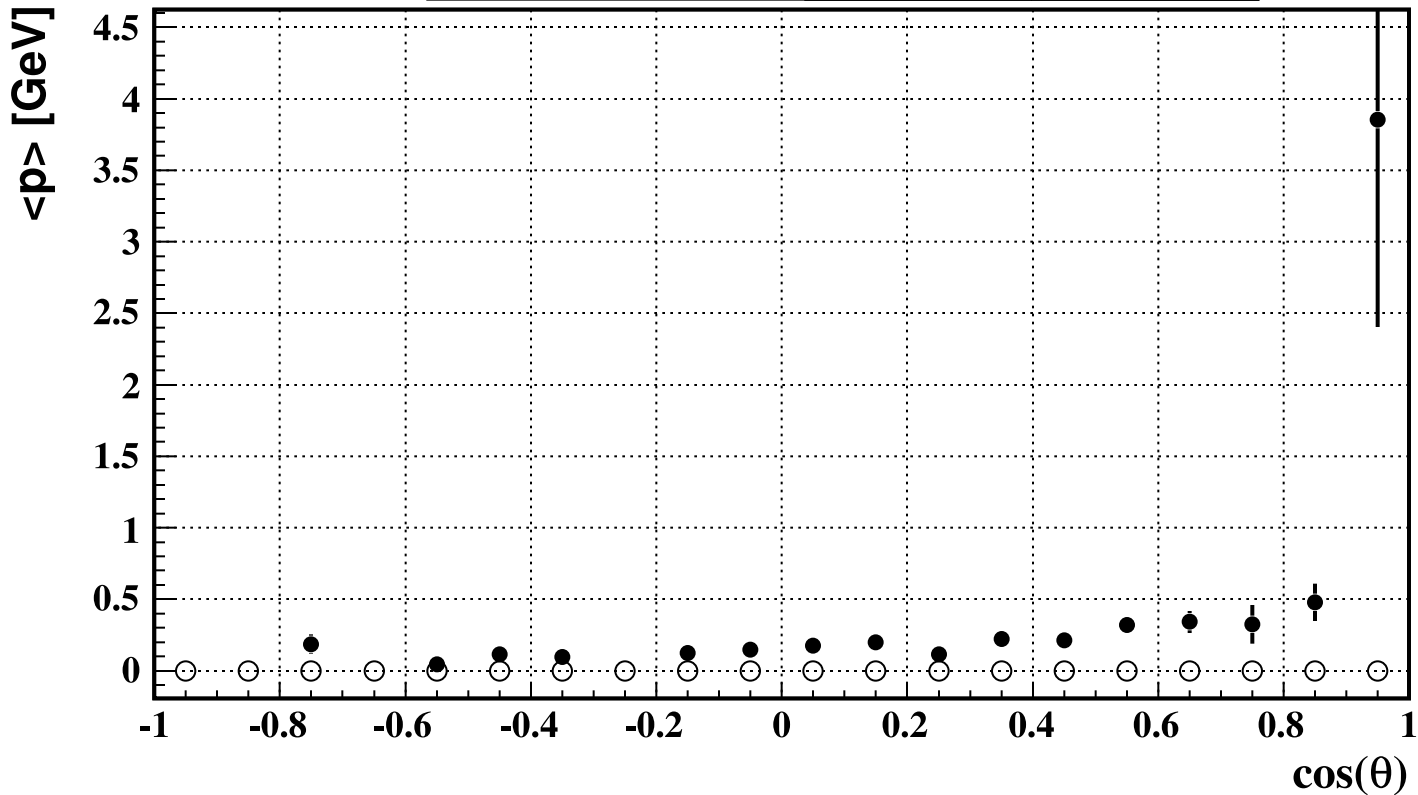


100 GeV Primary γ
Secondary π^+

● GEANT4

○ GEANT3

GEANT4_pfx		GEANT3_pfx	
Entries	99	Entries	0
Mean	0.549	Mean	0
Mean y	1.25	Mean y	0
RMS	0.448	RMS	0
RMS y	4.25	RMS y	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

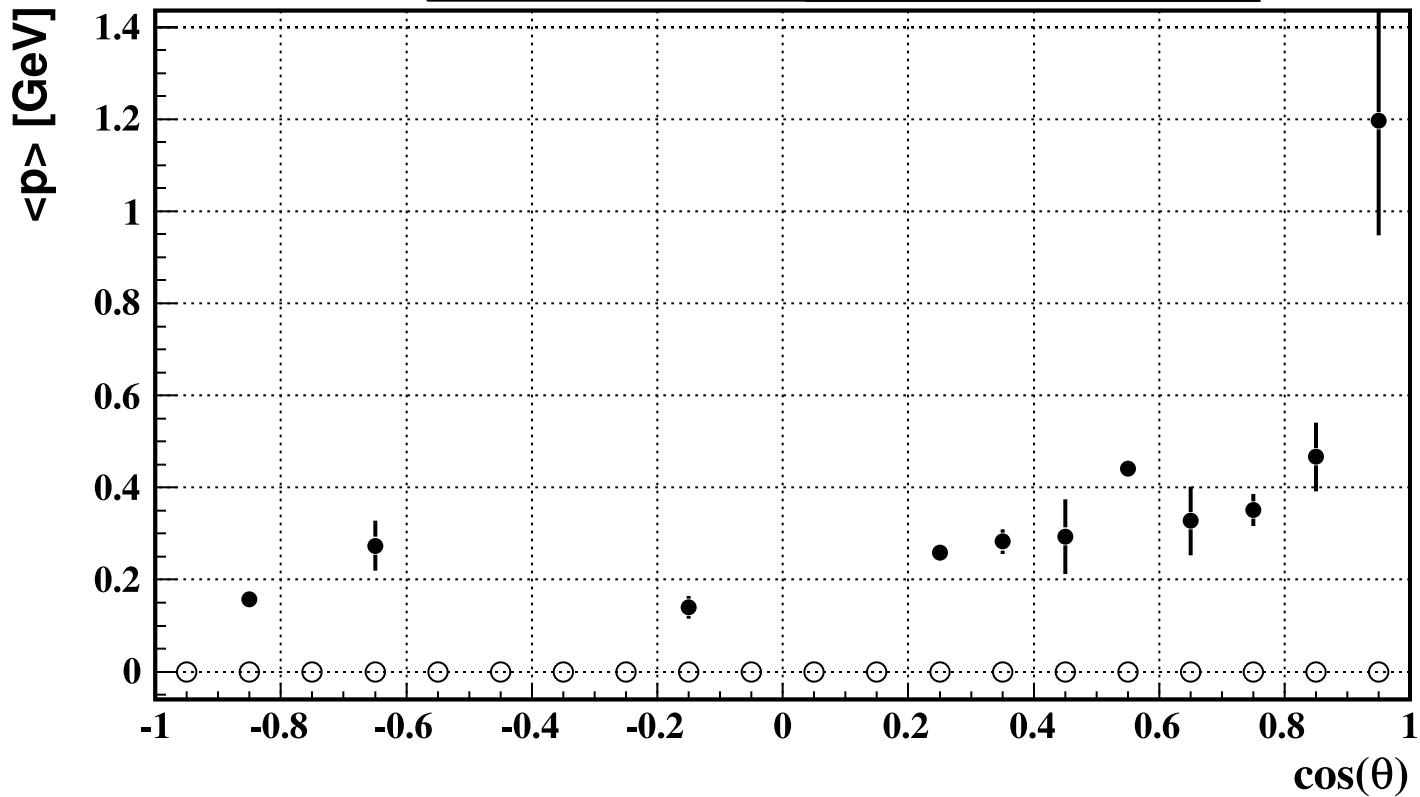


100 GeV Primary γ
Secondary π^-

● GEANT4

○ GEANT3

GEANT4_pfx		GEANT3_pfx	
Entries	69	Entries	0
Mean	0.685	Mean	0
Mean y	0.701	Mean y	0
RMS	0.423	RMS	0
RMS y	0.977	RMS y	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

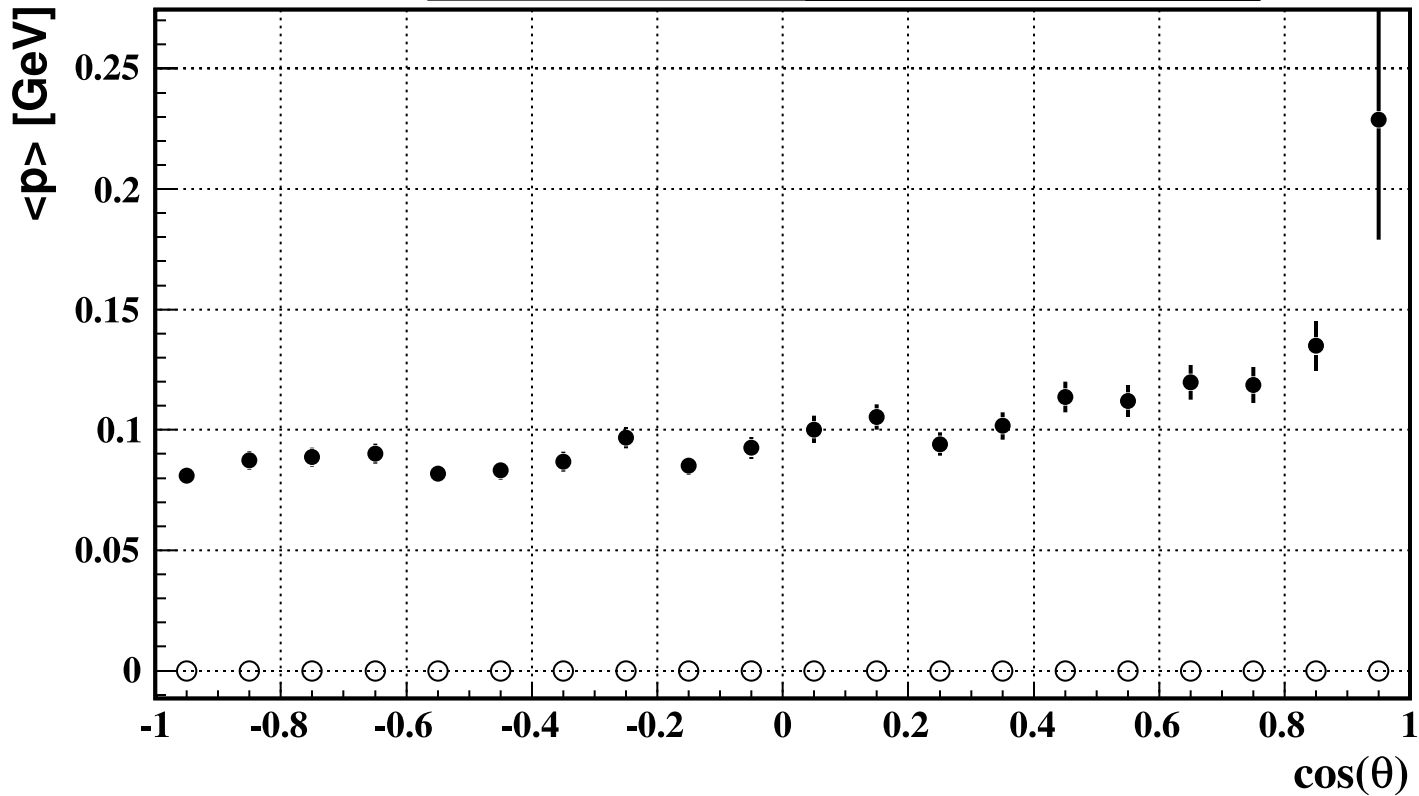


100 GeV Primary γ
Secondary n

● GEANT4

○ GEANT3

GEANT4_pfx		GEANT3_pfx	
Entries	6099	Entries	0
Mean	0.0469	Mean	0
Mean y	0.107	Mean y	0
RMS	0.577	RMS	0
RMS y	0.23	RMS y	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

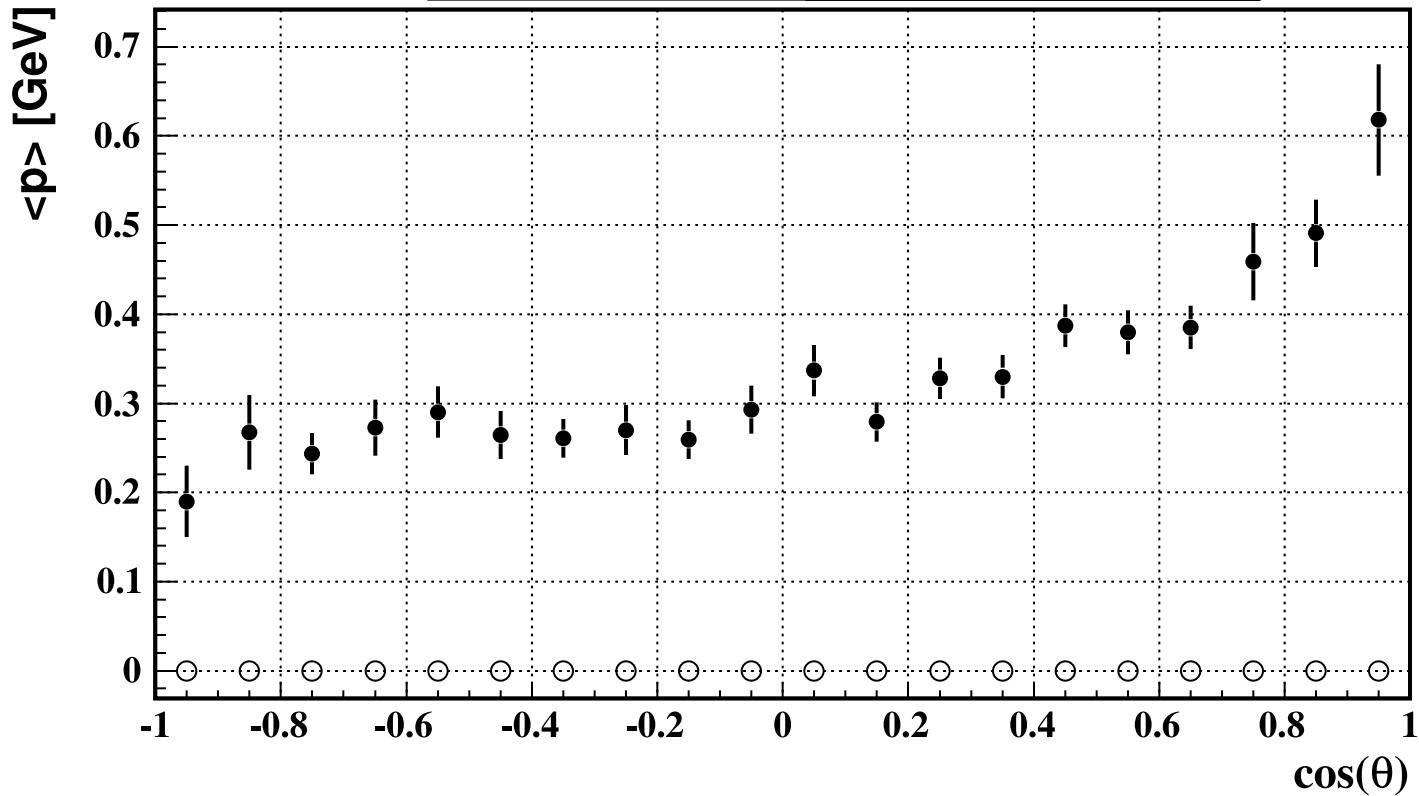


100 GeV Primary γ
Secondary p

● GEANT4

○ GEANT3

GEANT4_pfx		GEANT3_pfx	
Entries	835	Entries	0
Mean	0.237	Mean	0
Mean y	0.362	Mean y	0
RMS	0.516	RMS	0
RMS y	0.258	RMS y	0
Underflow	0	Underflow	0
Overflow	0	Overflow	0

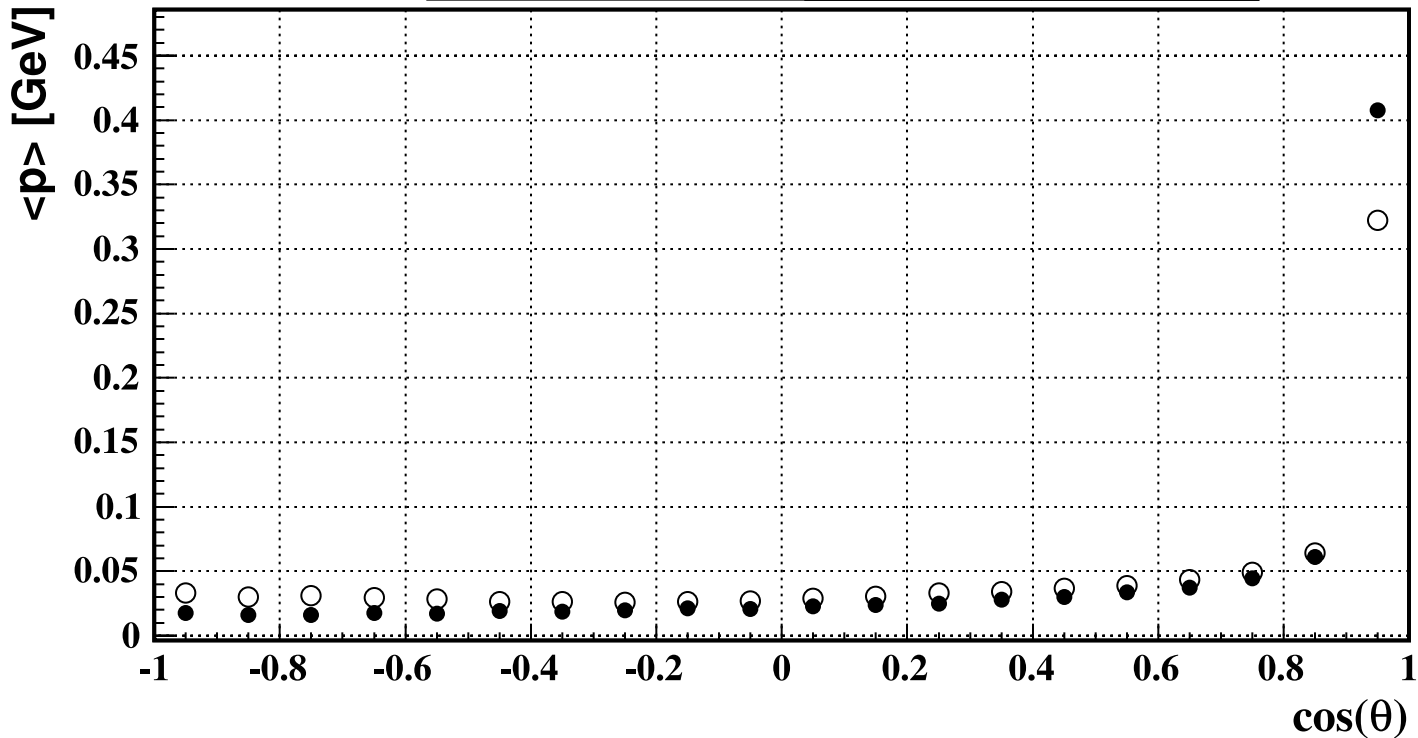


100 GeV Primary π^+
Secondary

● GEANT4

○ GEANT3

GEANT4_pfx		GEANT3_pfx	
Entries	2475030	Entries	2392163
Mean	0.691	Mean	0.663
Mean y	0.26	Mean y	0.201
RMS	0.461	RMS	0.482
RMS y	2.11	RMS y	1.35
Underflow	0	Underflow	0
Overflow	0	Overflow	0.171

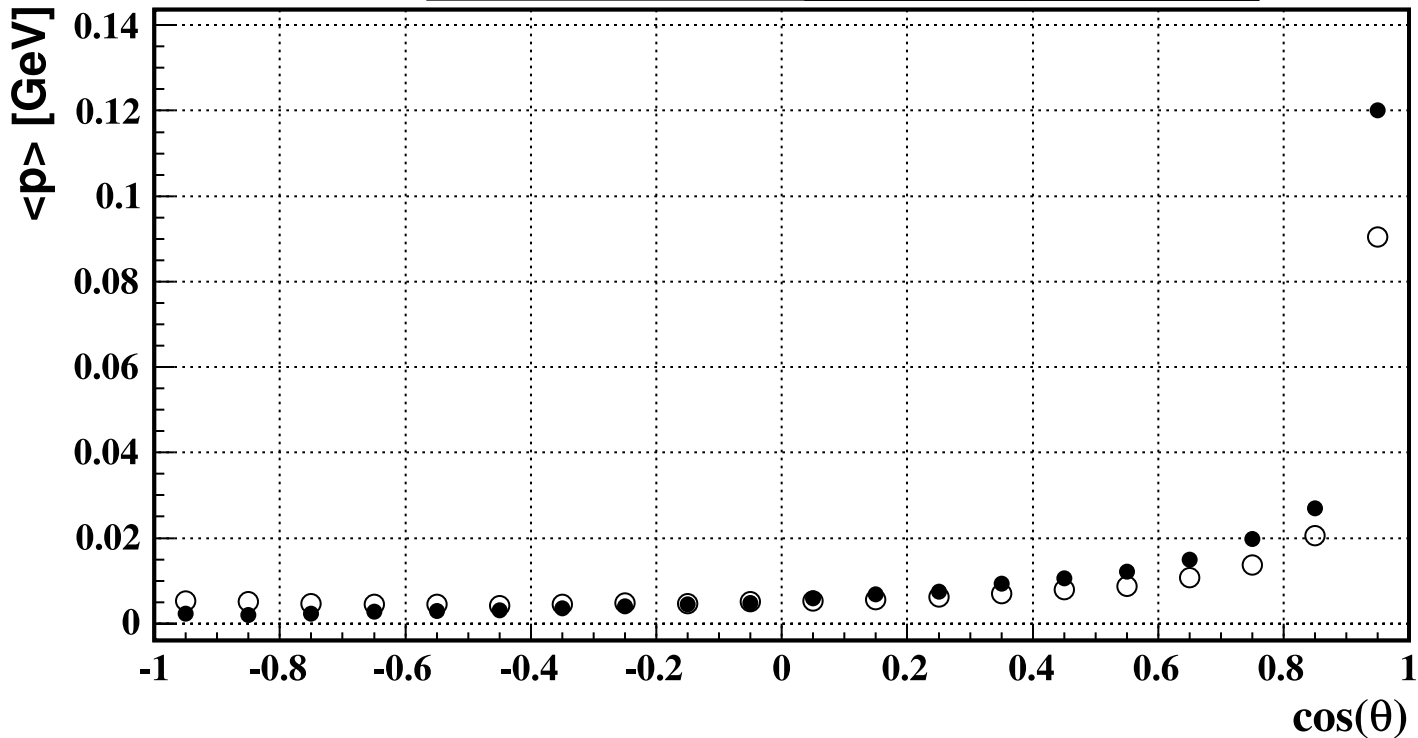


100 GeV Primary π^+
Secondary γ

● GEANT4

○ GEANT3

GEANT4_pfx		GEANT3_pfx	
Entries	1684304	Entries	1675636
Mean	0.713	Mean	0.681
Mean y	0.0834	Mean y	0.0596
RMS	0.462	RMS	0.484
RMS y	0.653	RMS y	0.472
Underflow	0	Underflow	0
Overflow	0	Overflow	0.0715

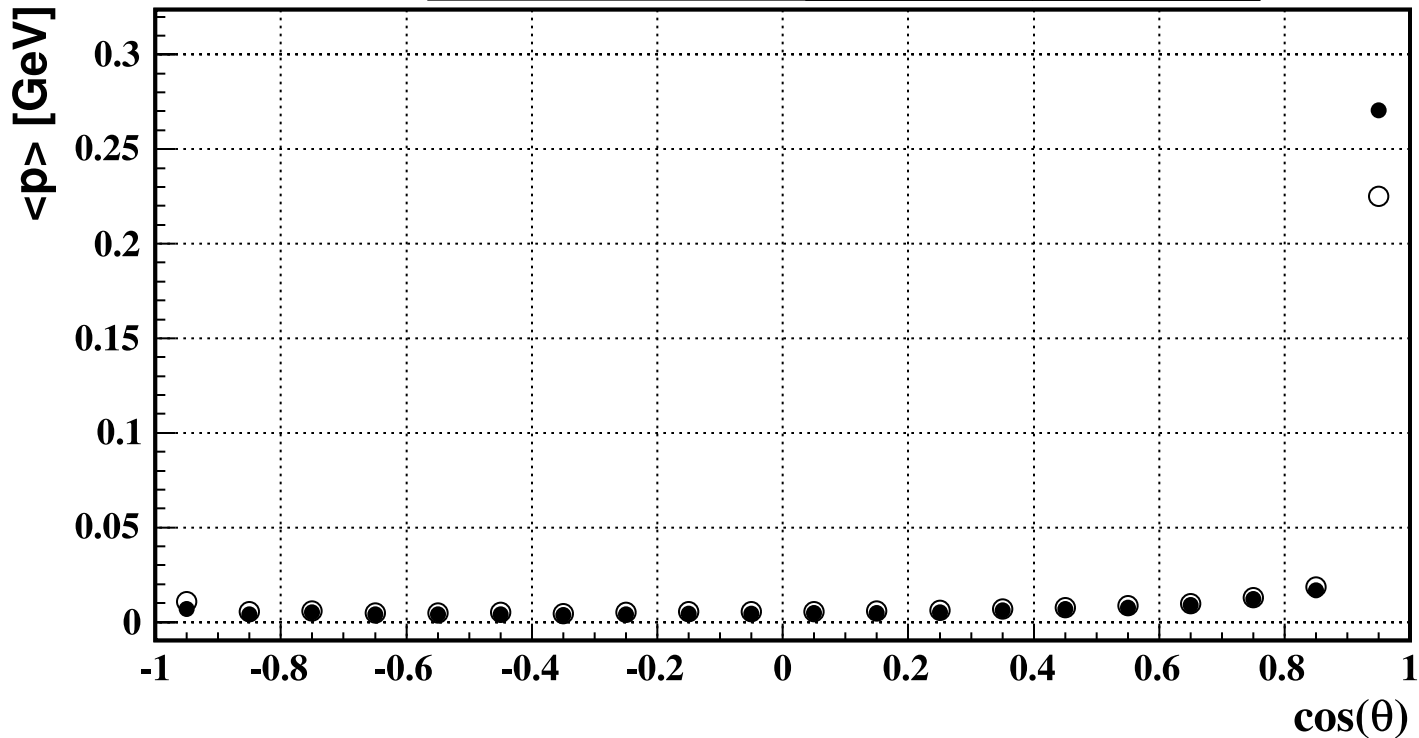


100 GeV Primary π^+
Secondary e^+

● GEANT4

○ GEANT3

	GEANT4_pfx	GEANT3_pfx
Entries	211033	189921
Mean	0.782	0.75
Mean y	0.176	0.138
RMS	0.341	0.37
RMS y	0.777	0.632
Underflow	0	0
Overflow	0	0.275

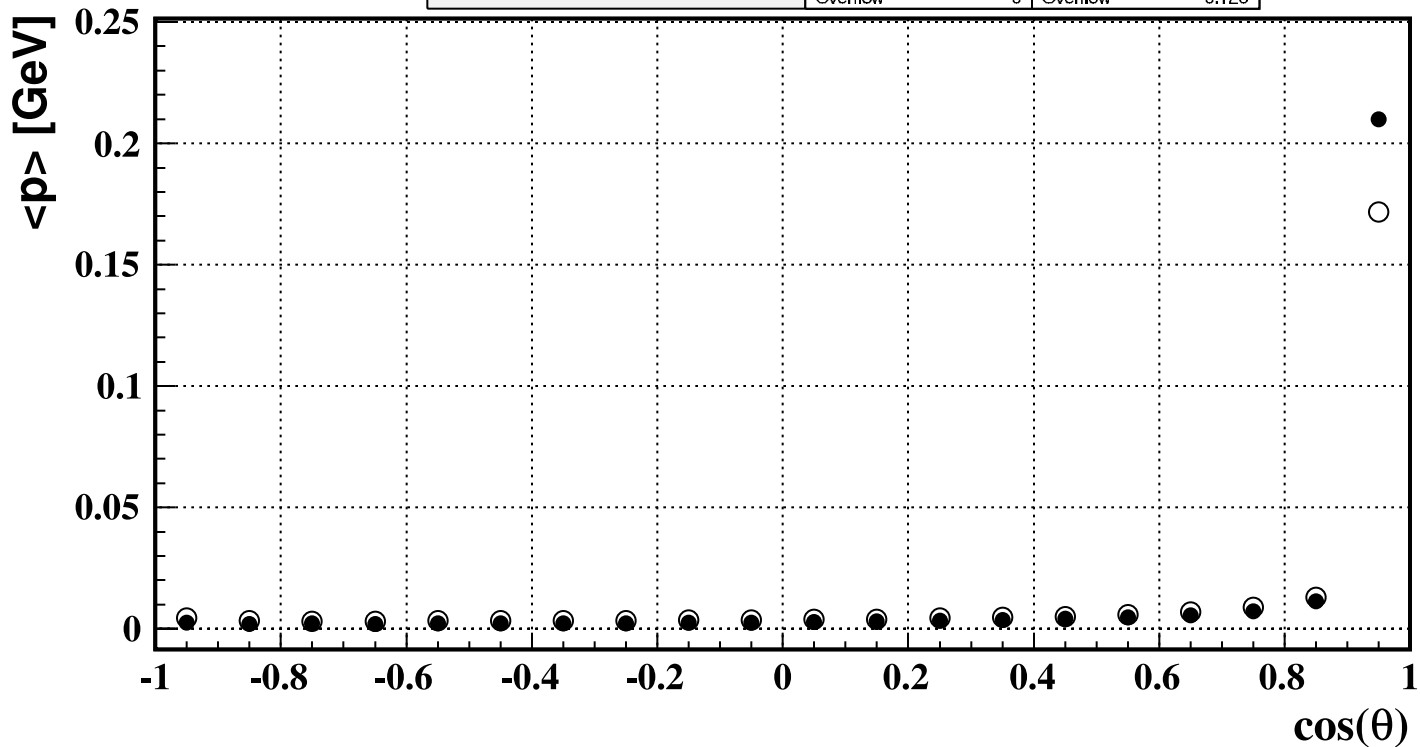


100 GeV Primary π^+
Secondary e

● GEANT4

○ GEANT3

GEANT4_pfx		GEANT3_pfx	
Entries	440552	Entries	353463
Mean	0.588	Mean	0.614
Mean y	0.0872	Mean y	0.0762
RMS	0.472	RMS	0.458
RMS y	0.545	RMS y	0.416
Underflow	0	Underflow	0
Overflow	0	Overflow	0.126



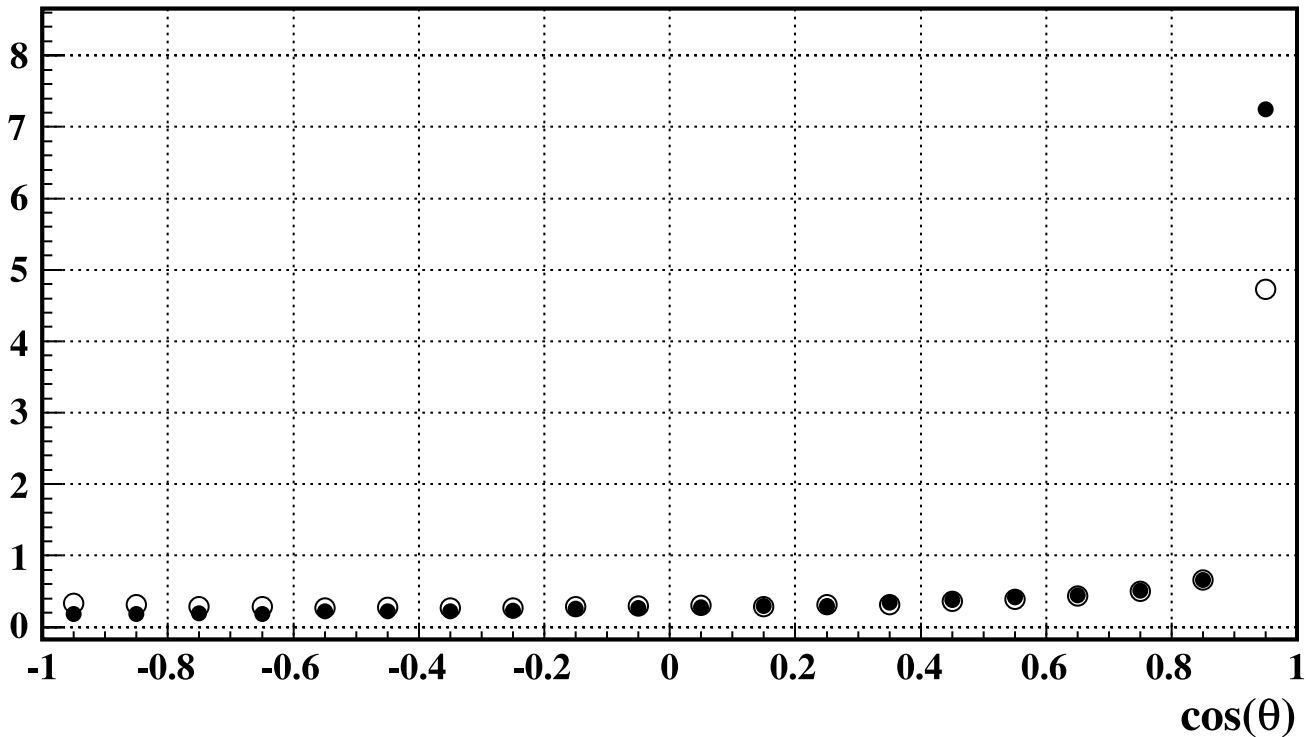
100 GeV Primary π^+
Secondary π^+

● GEANT4

○ GEANT3

	GEANT4_pfx	GEANT3_pfx
Entries	37937	34391
Mean	0.828	0.749
Mean y	5.39	3.33
RMS	0.299	0.434
RMS y	12.4	5.47
Underflow	0	0
Overflow	0	0

$\langle p \rangle$ [GeV]



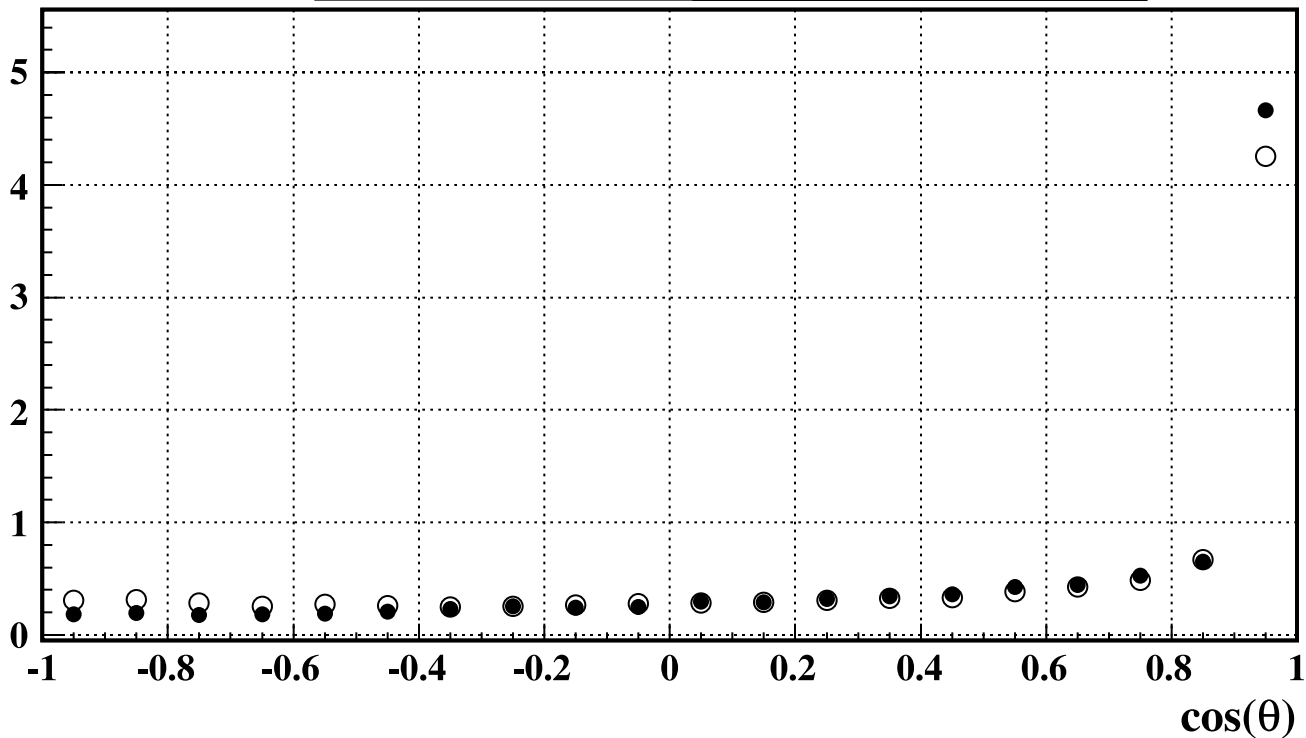
100 GeV Primary π^+
Secondary π^-

● GEANT4

○ GEANT3

	GEANT4_pfx	GEANT3_pfx
Entries	31878	30175
Mean	0.817	0.743
Mean y	3.41	2.94
RMS	0.312	0.434
RMS y	6.22	5.31
Underflow	0	0
Overflow	0	0

$\langle p \rangle$ [GeV]

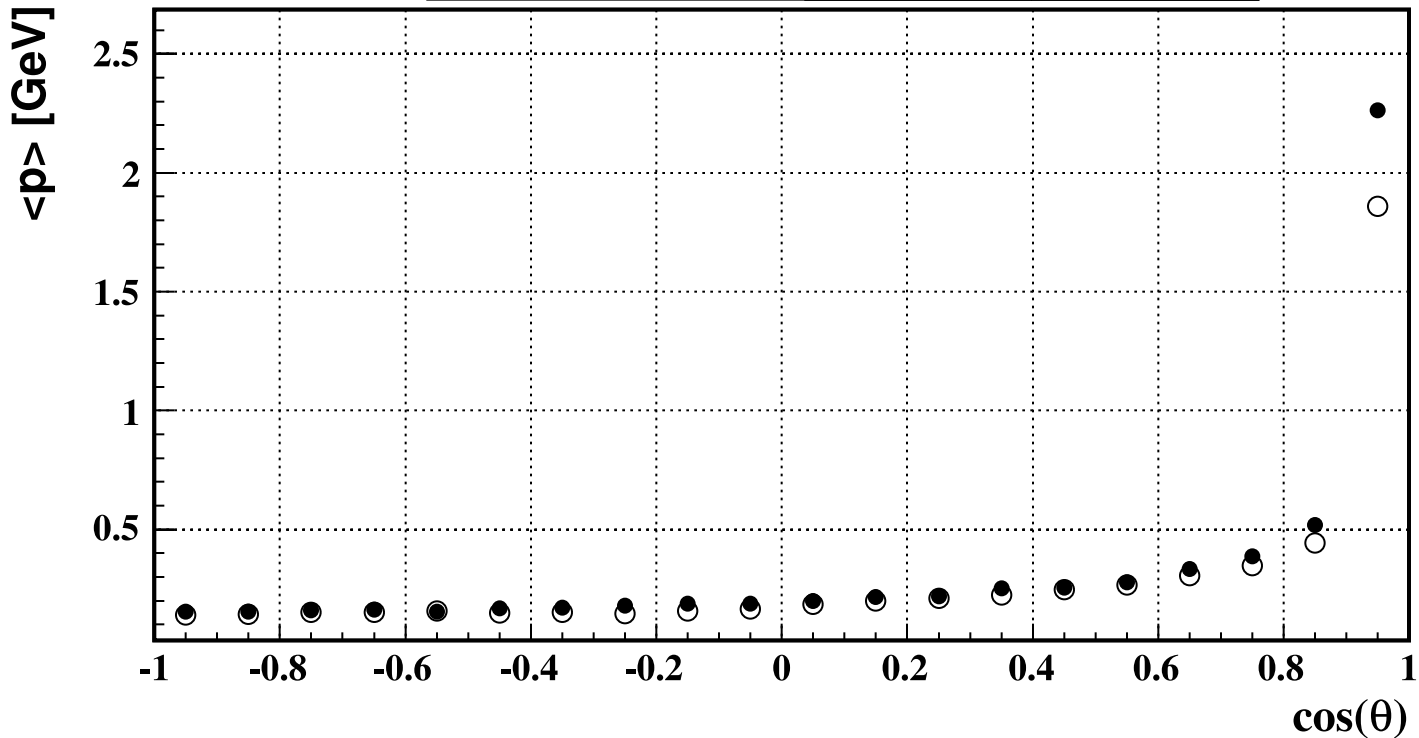


100 GeV Primary π^+
Secondary n

● GEANT4

○ GEANT3

GEANT4_pfx		GEANT3_pfx	
Entries	40626	Entries	71220
Mean	0.277	Mean	0.235
Mean y	0.676	Mean y	0.49
RMS	0.602	RMS	0.596
RMS y	1.73	RMS y	1.48
Underflow	0	Underflow	0
Overflow	0	Overflow	0



100 GeV Primary π^+
Secondary p

● GEANT4

○ GEANT3

	GEANT4_pfx	GEANT3_pfx
Entries	19358	26354
Mean	0.494	0.469
Mean y	1.26	1.05
RMS	0.536	0.531
RMS y	2.35	2.29
Underflow	0	0
Overflow	0	0

