

Search for time-dependent fluctuations in cosmic rays spectra with the AMS01 detector

- Selection cuts
- Comparison with reconstruction

PRESELECTION

- ✓ No hits in Anticoincidence counter
- ✓ At least one reconstructed track
- ✓ At least one charge measurement
- ✓ At least one β measurement
- ✓ One reconstructed particle
- ✓ $\text{ChargeTOF} == \text{ChargeTRACKER}$
- ✓ Only downward going particles

Electron candidates: $\text{charge} * \text{sign}(\text{Pmom}) = -1$

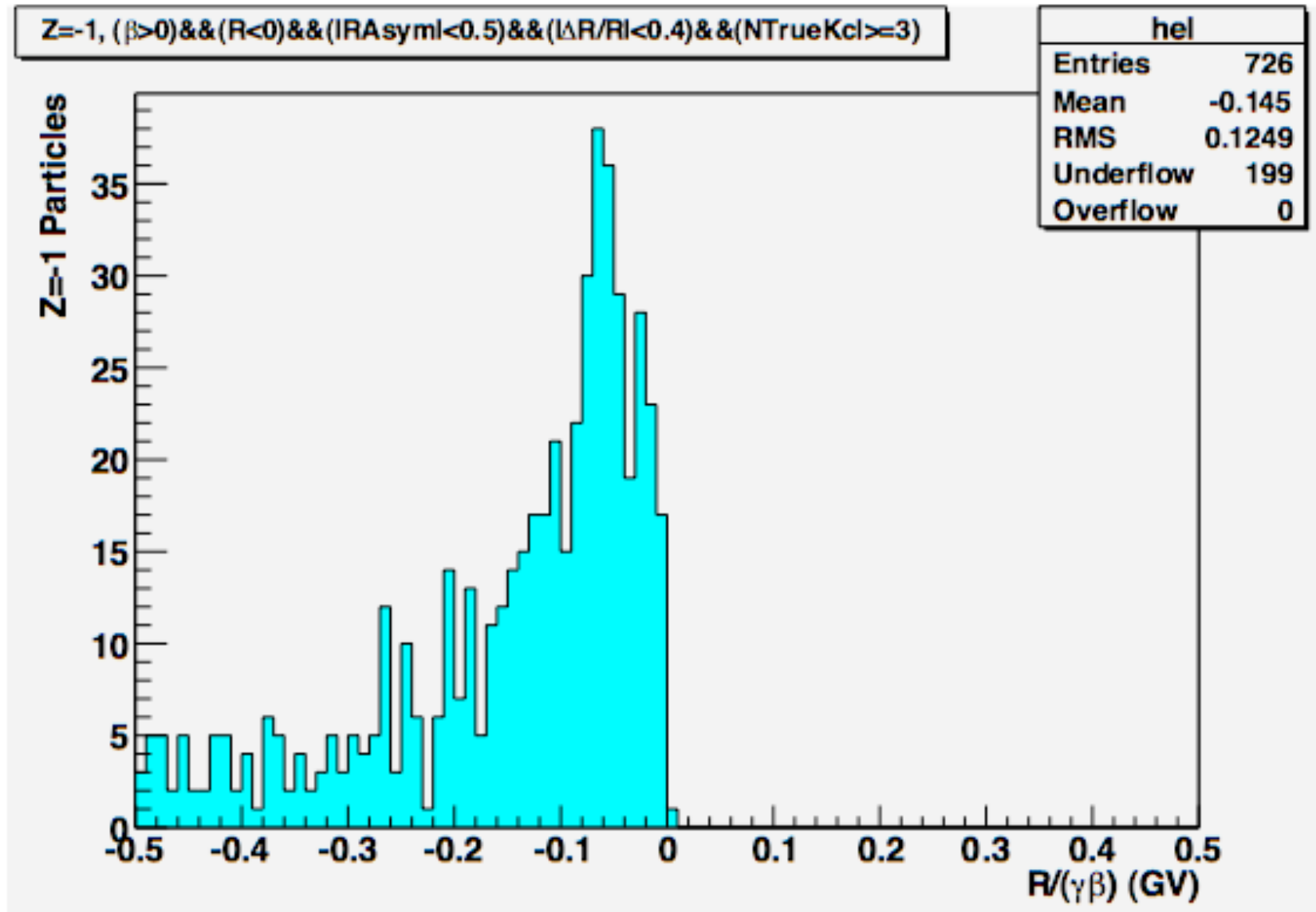
Proton candidates: $\text{charge} * \text{sign}(\text{Pmom}) = +1$

Helium candidates: $\text{charge} * \text{sign}(\text{Pmom}) = +2$

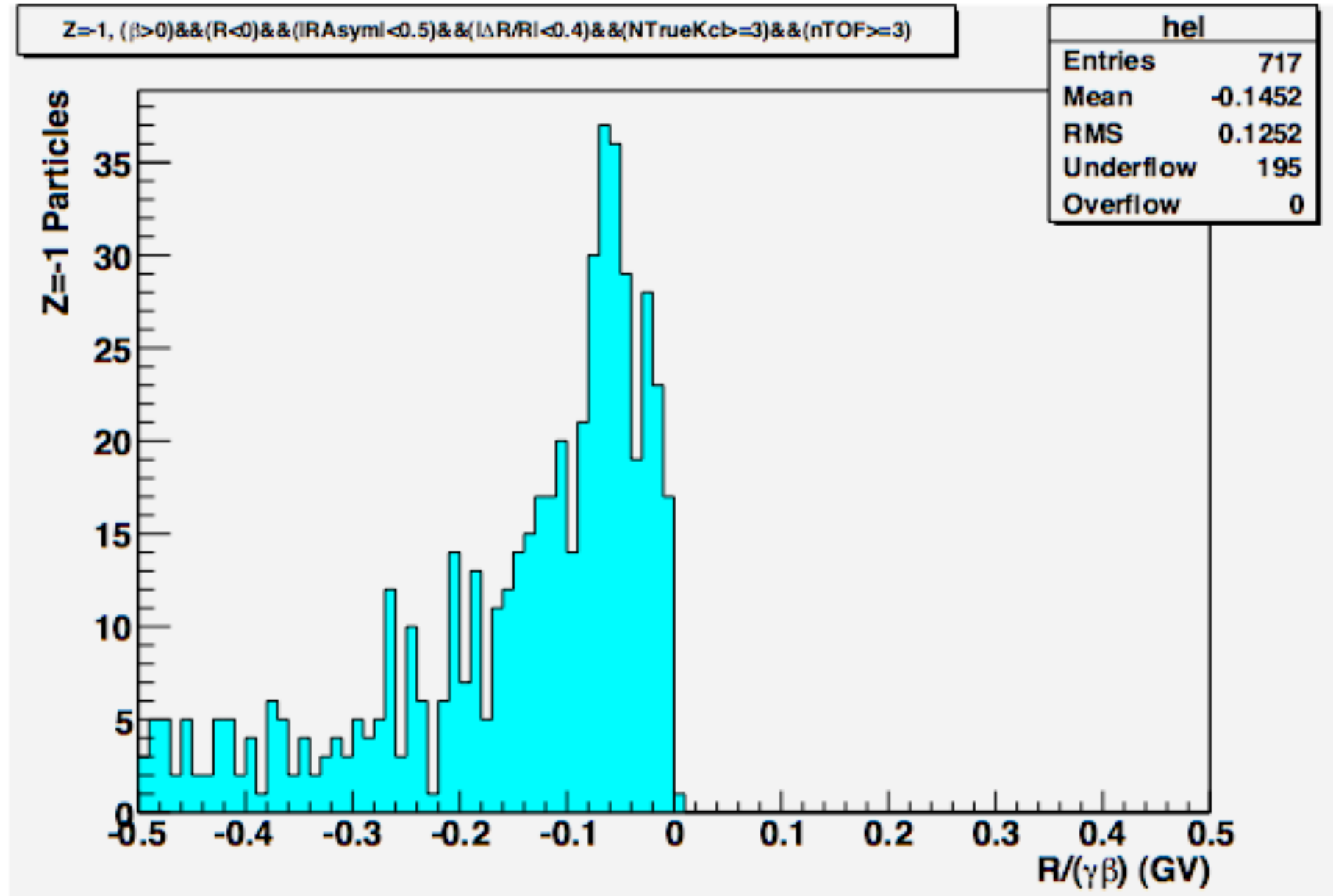
Z=-1 particles,

(signR) &(ABS(R asymmetry) < 0.5)&(ABS($\Delta R/R$) < 0.4)

AND (True K Clusters ≥ 3)



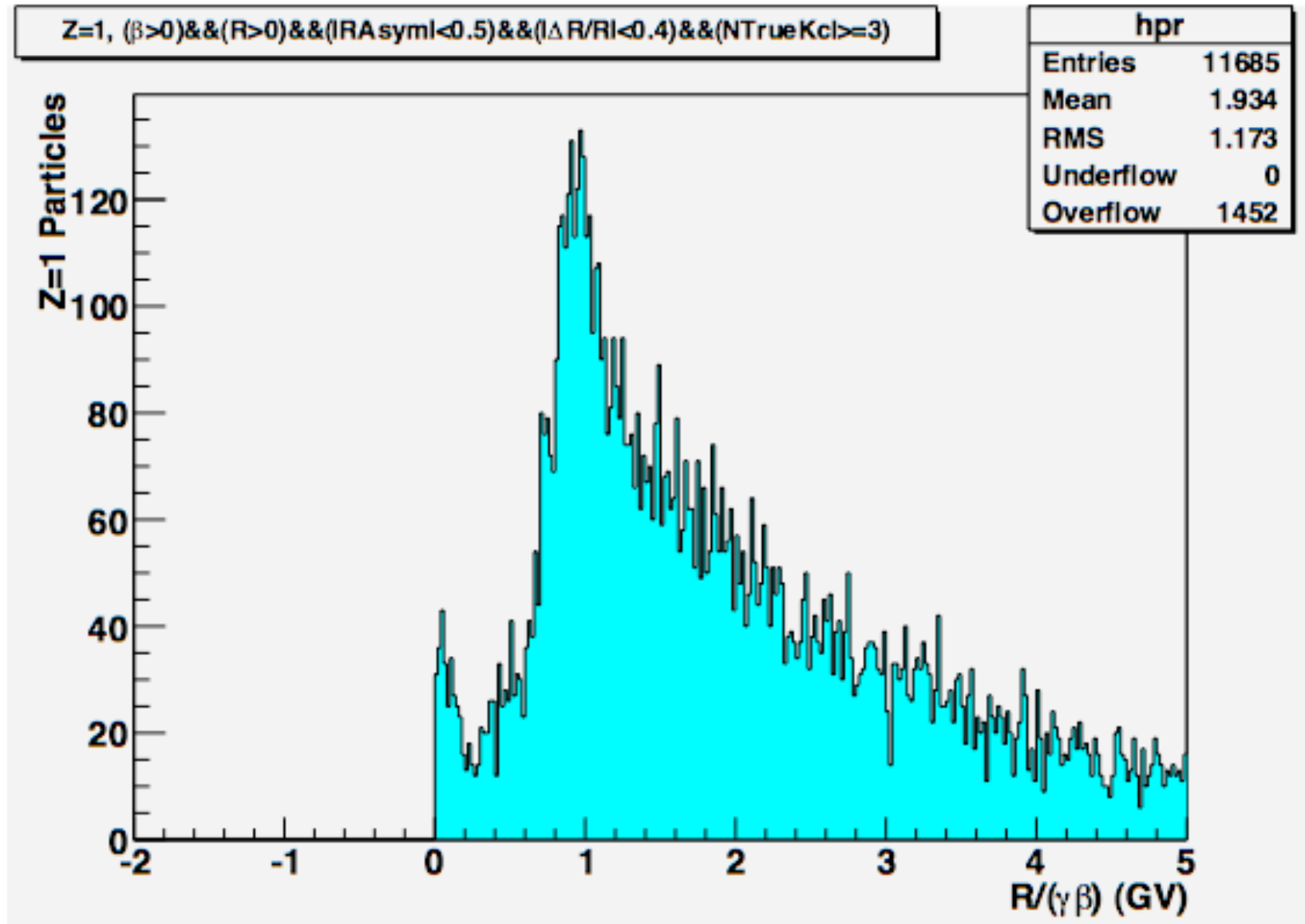
Z=-1 particles, ..AND Number of TOF Planes ≥ 3



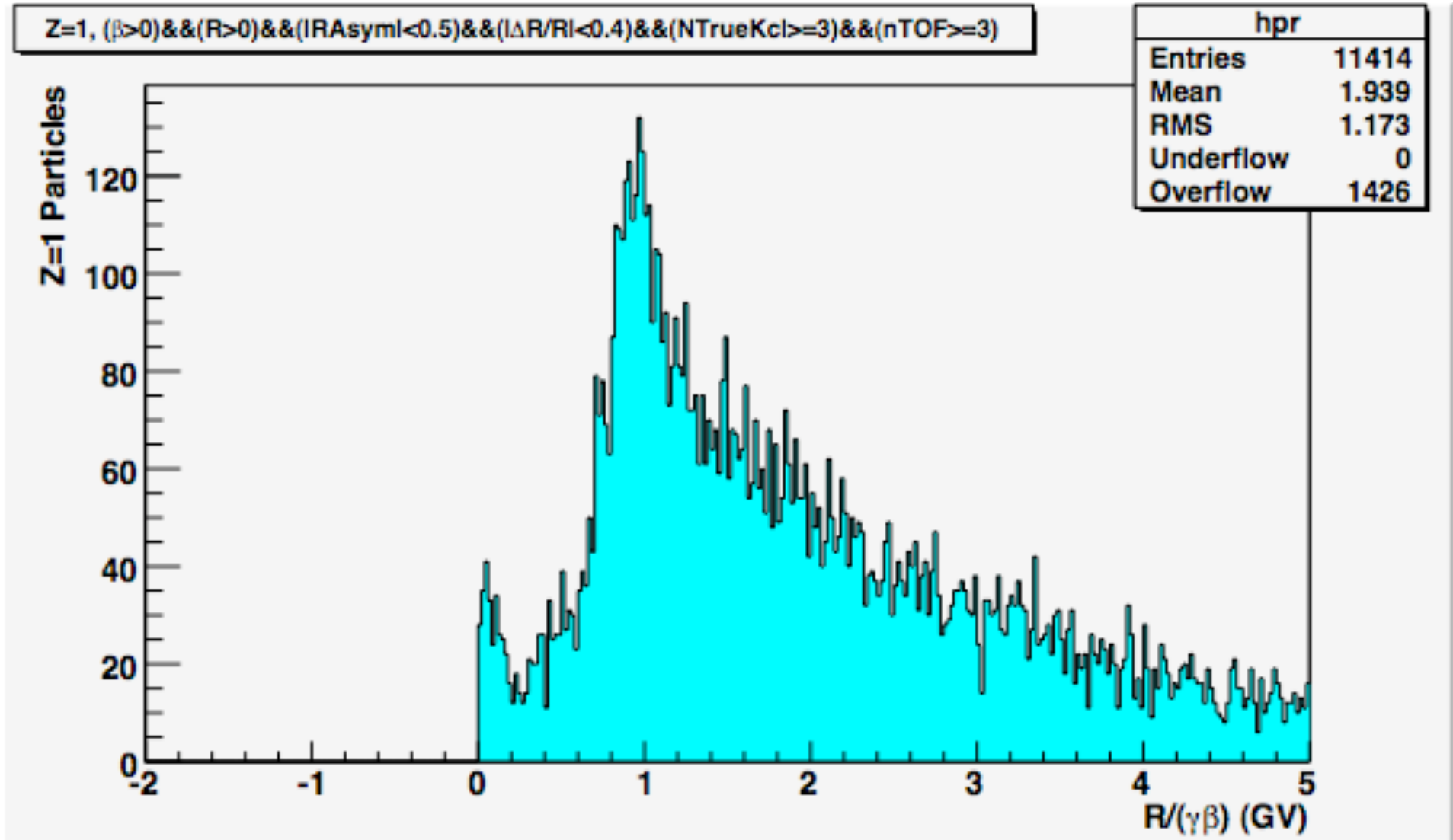
Z=1 particles,

(signR) &(ABS(R asymmetry) < 0.5)&(ABS($\Delta R/R$) < 0.4)

AND (True K Clusters ≥ 3)



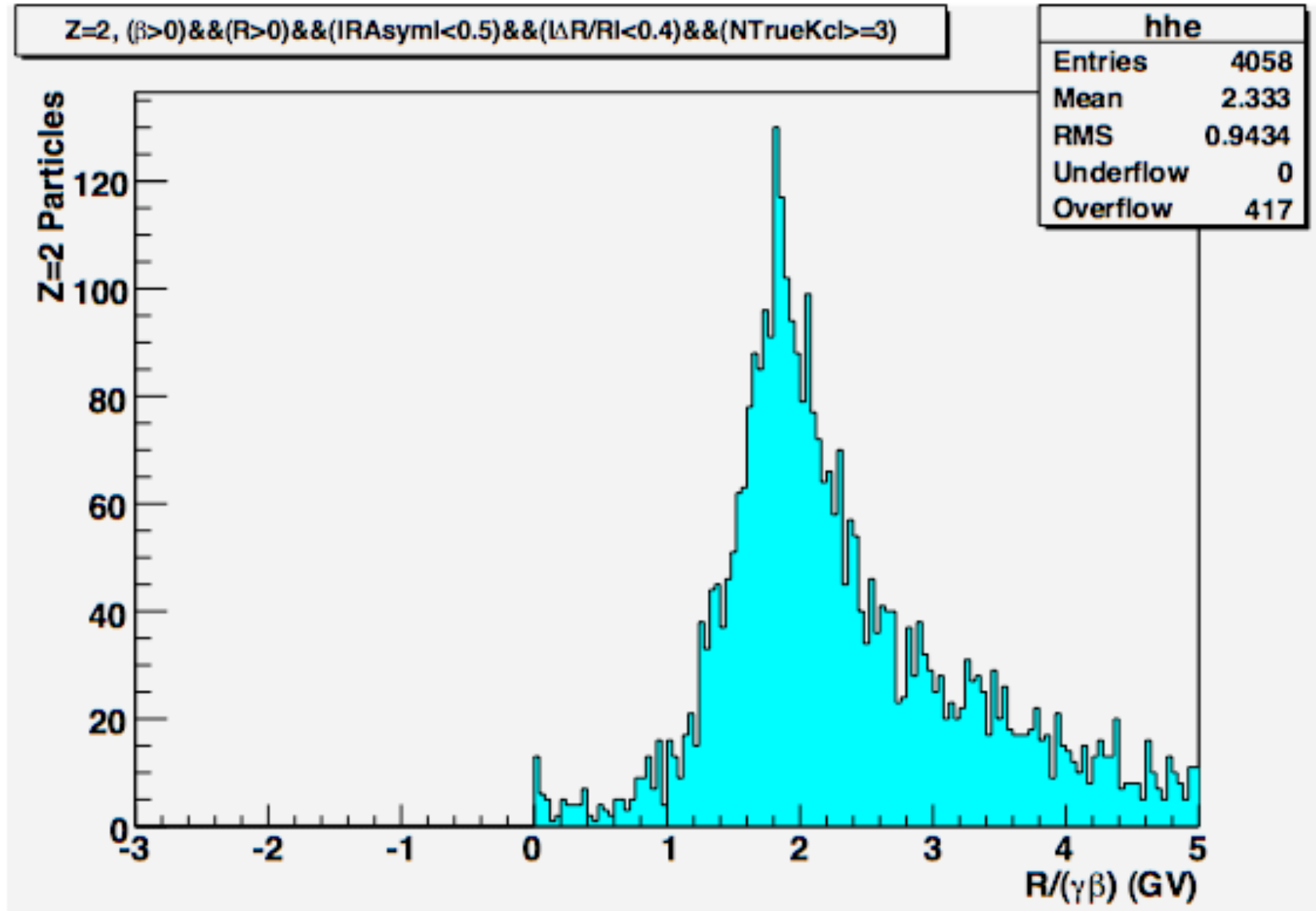
Z=1 particles, ..AND Number of TOF Planes ≥ 3



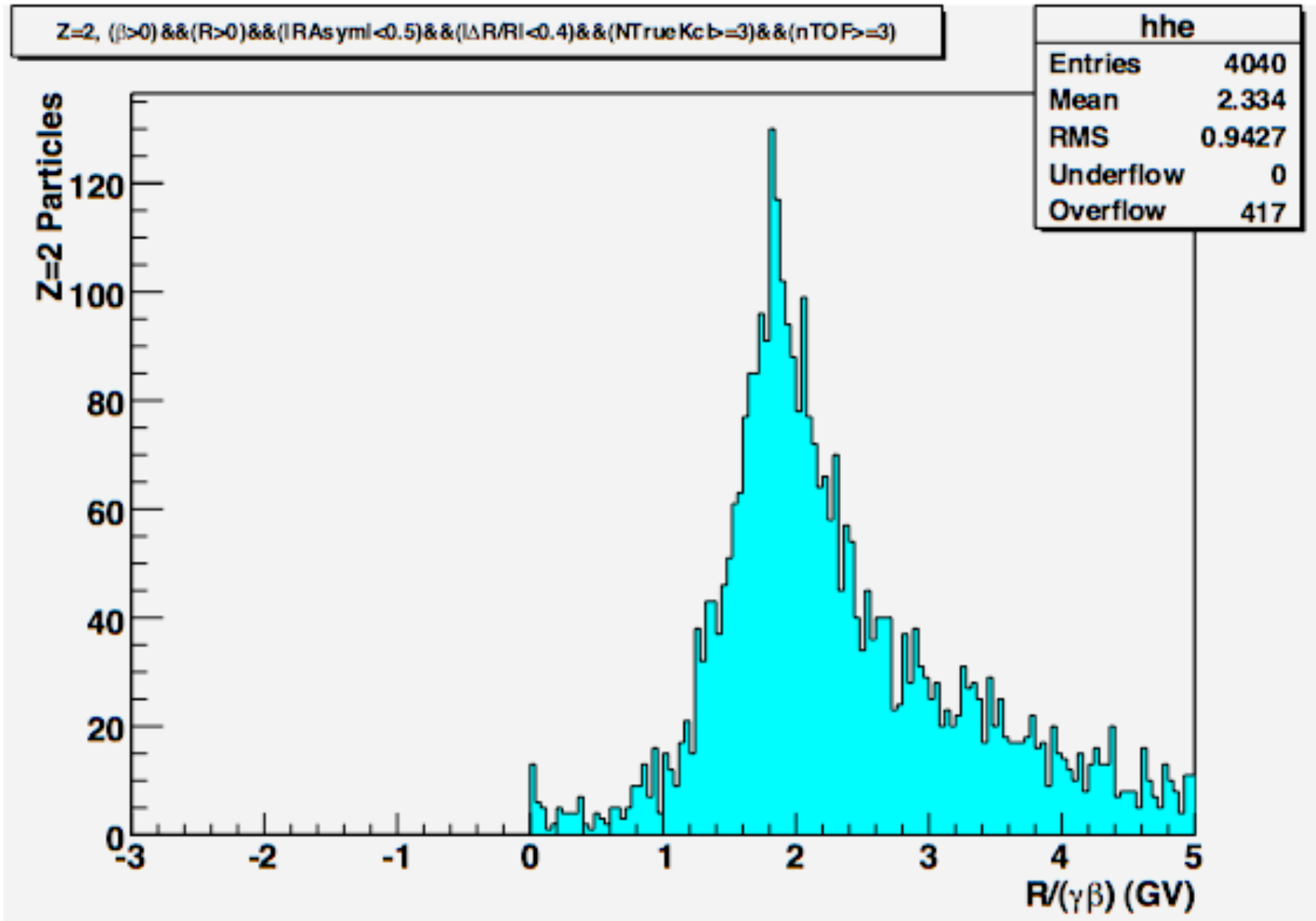
Z=2 particles,

(signR) &(ABS(R asymmetry) < 0.5)&(ABS($\Delta R/R$) < 0.4)

AND (True K Clusters ≥ 3)



Z=2 particles, ..AND Number of TOF Planes ≥ 3



SELECTION CUTS SUMMARY:

CUTS	e-	p	He
Preselection	2434	36241	5798
Downward going	2197	28245	5761
sign(R)	2167	28245	5761
ABS(R asymmetry) < 0.5	1412	22068	4733
ABS($\Delta R/R$) < 0.4	1393	21072	4563
True K Clusters ≥ 3	726	11685	4058
Number of TOF Planes ≥ 3	717	11414	4040

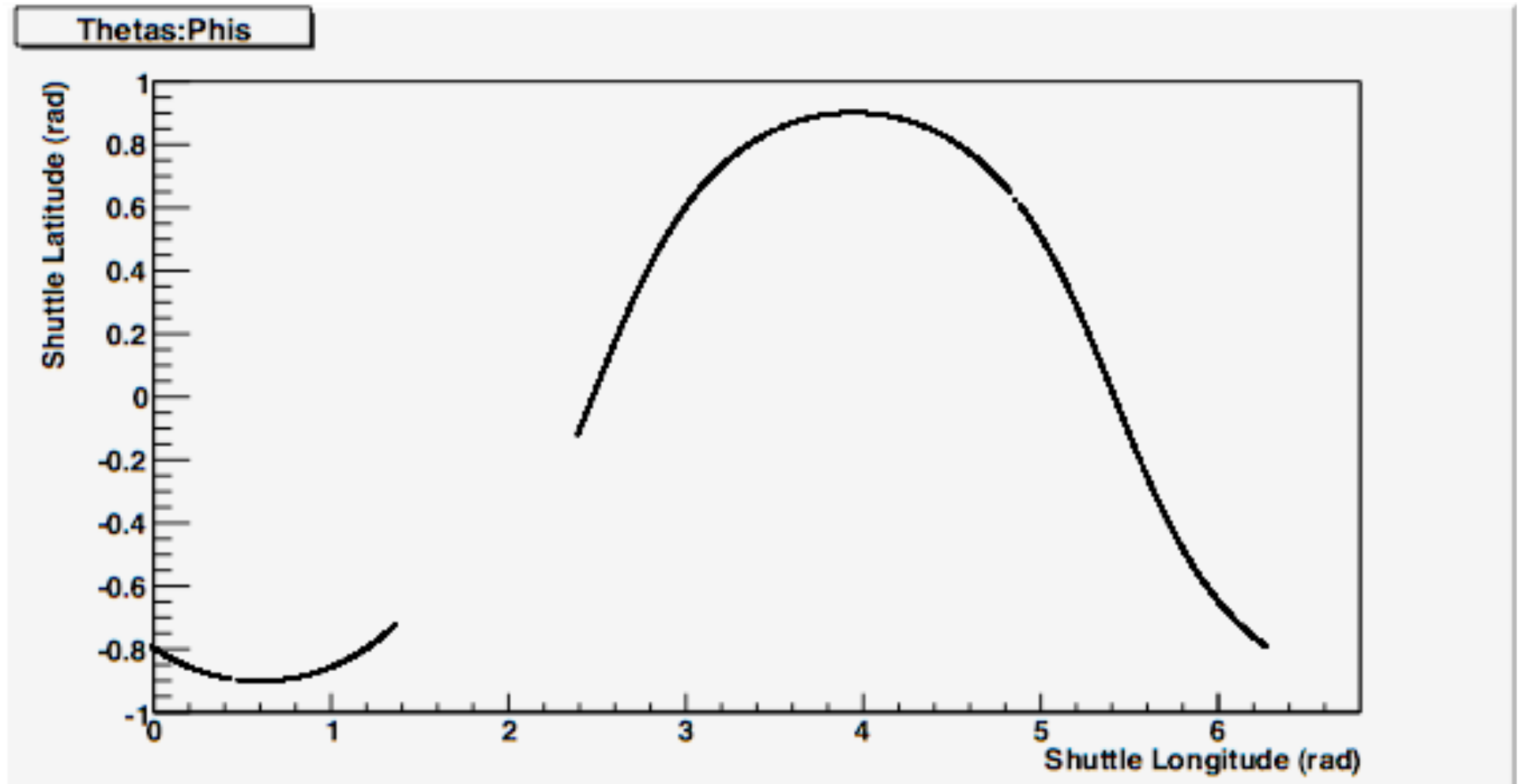
First sample for Kinetic energy spectrum

- 896851959.2.root
- 896853212.170399.root
- 896854106.57026.root
- 896854106.225969.root

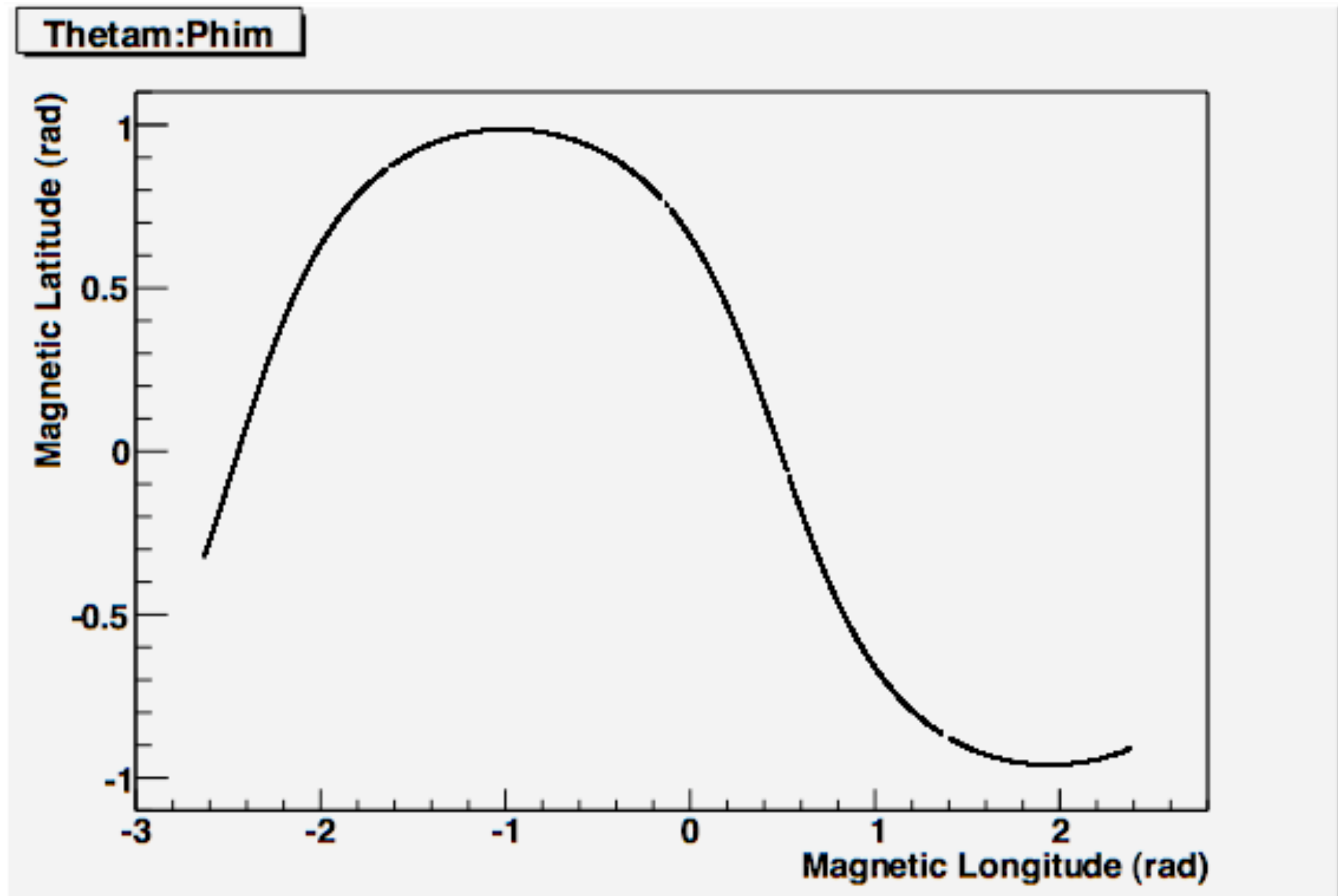
start: June 3, 1998 5h32:39 AM
end: Unix time **896856671**

AMS pointing 45 deg to Zenith
Shuttle altitude: 340 Km

Shuttle Geodetic coordinates



Shuttle Geomagnetic coordinates



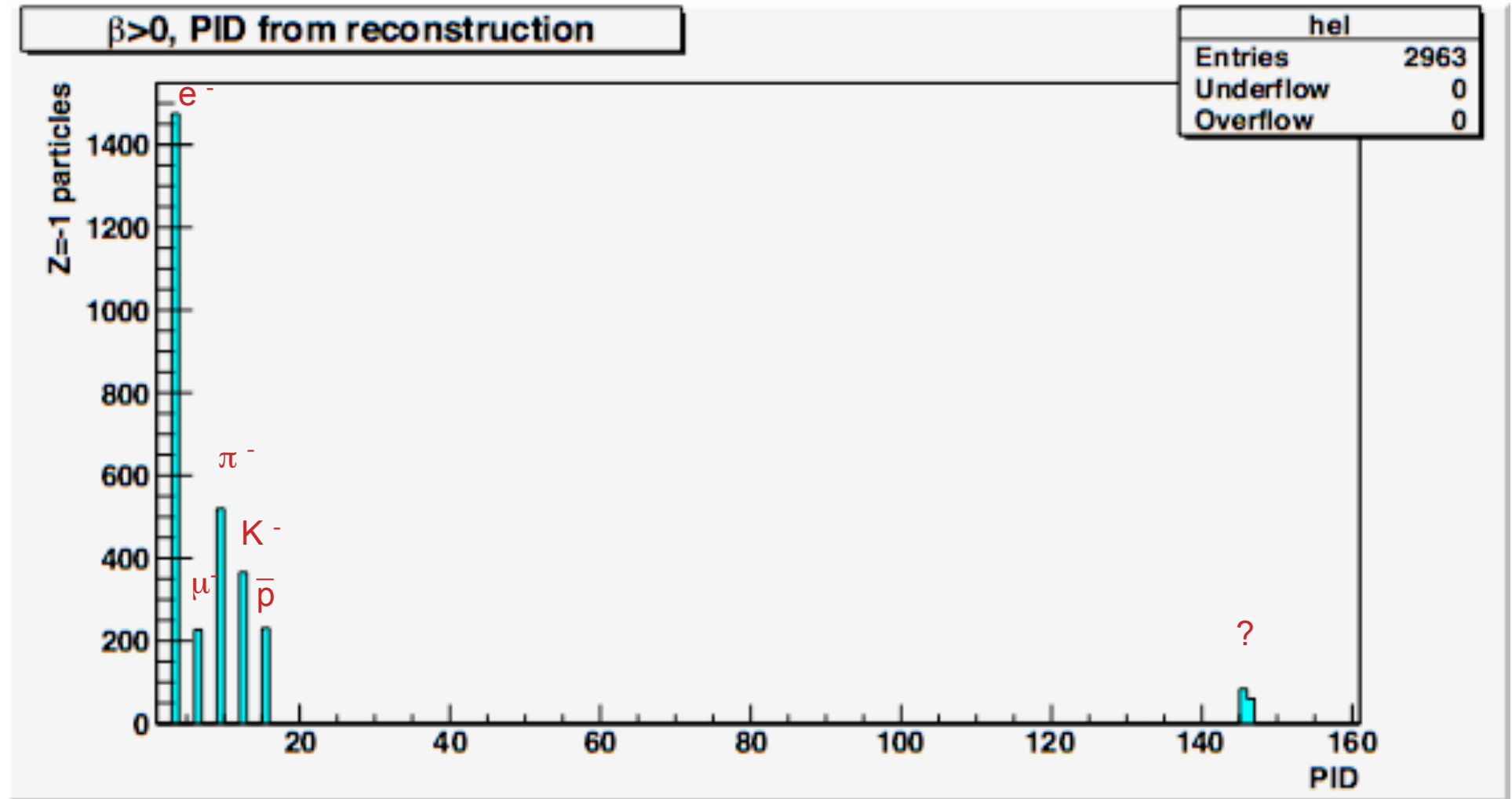
After selection cuts:

Candidates e- 2963

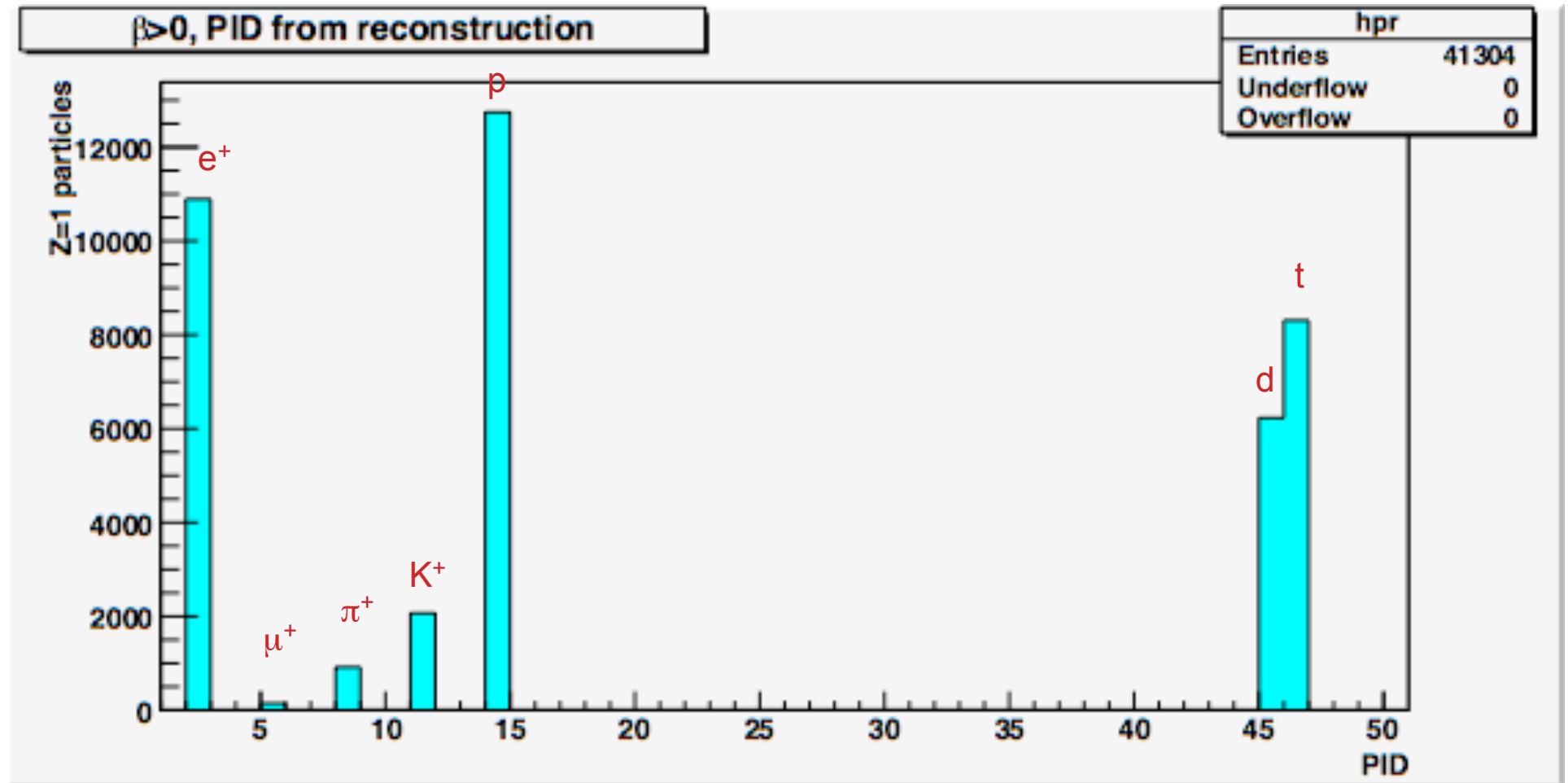
Candidates p 41304

Candidates He 16696

Z=-1 particles, Particle ID from reconstruction



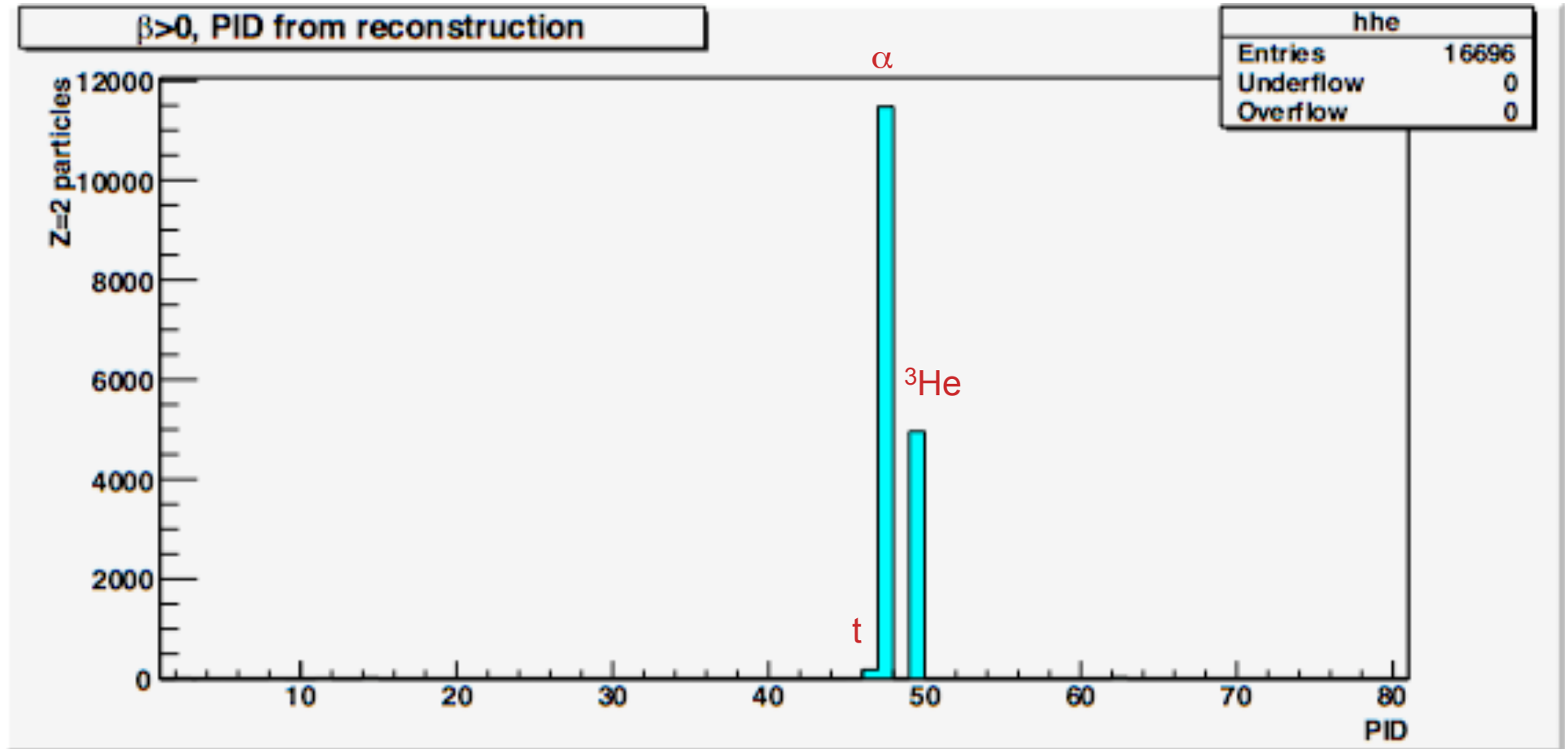
Z=1 particles, Particle ID from reconstruction



d: deuteron ; t: tritium

Identified as protons: 12745

Z=2 particles, Particle ID from reconstruction



	e^+	π^+	K^+	p	d	${}^7\text{Li}$
N events	14	4	12	22	1	27

Identified as Helium nuclei: 11474 α + 4960 ${}^3\text{He}$