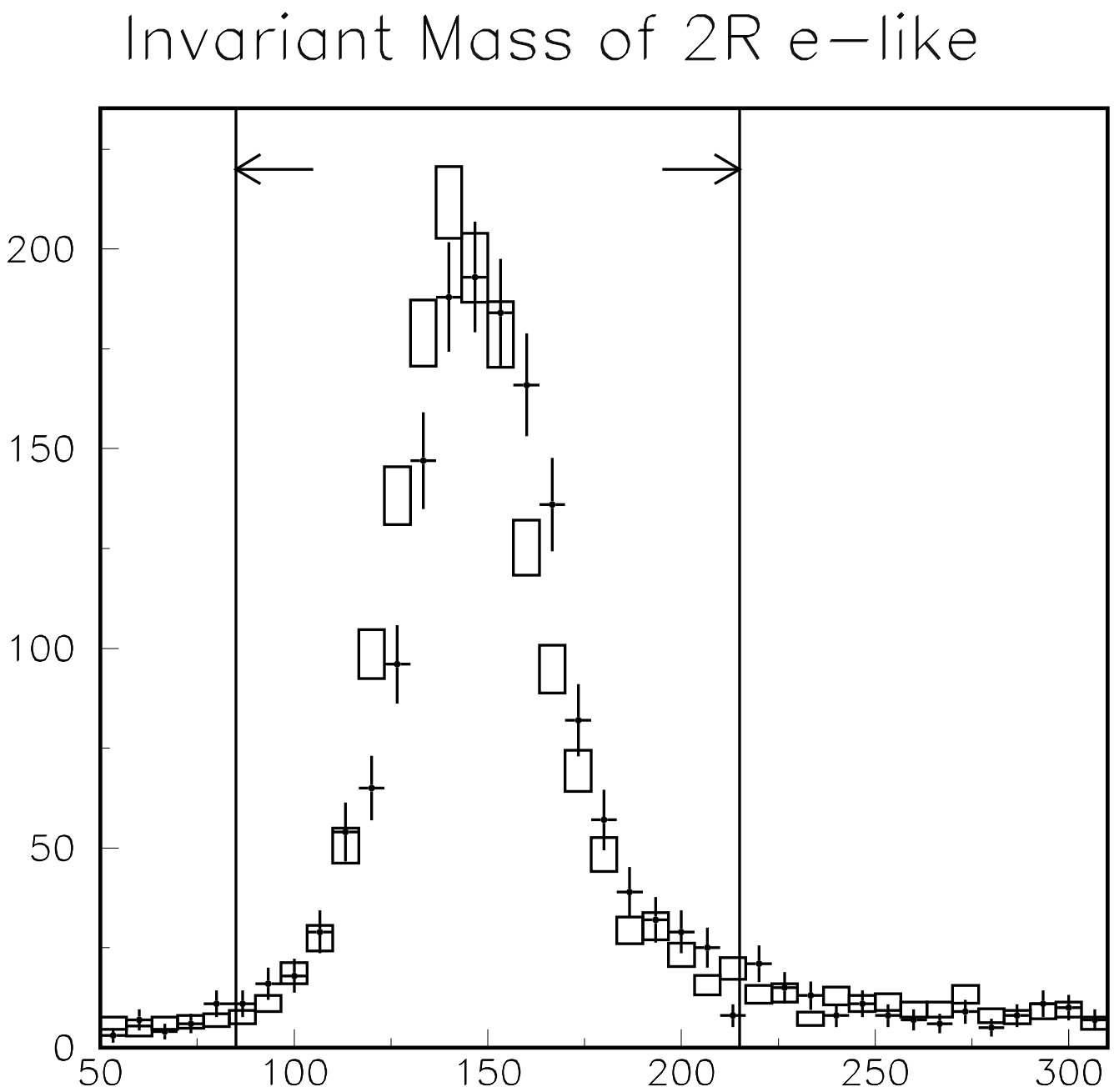
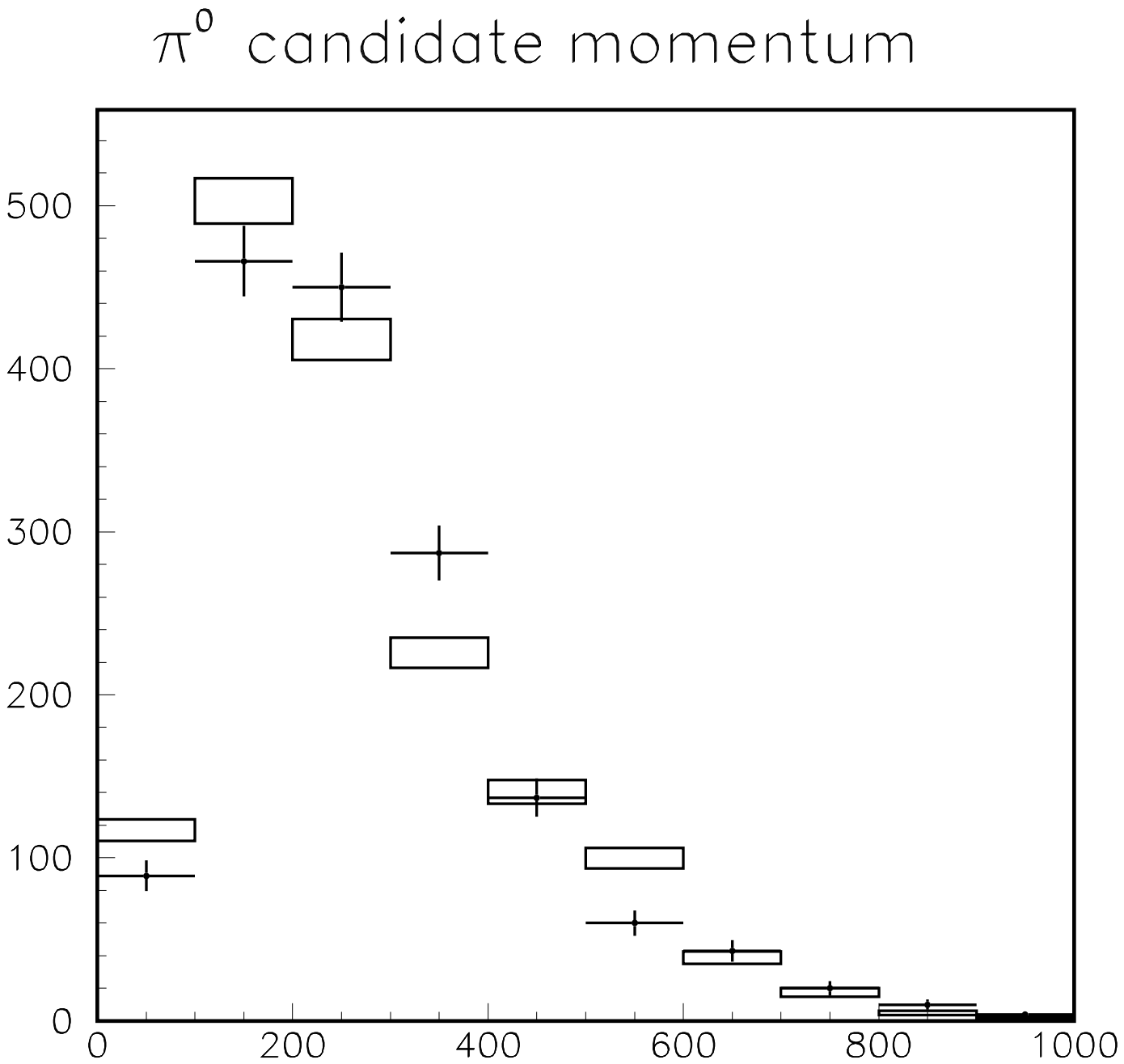
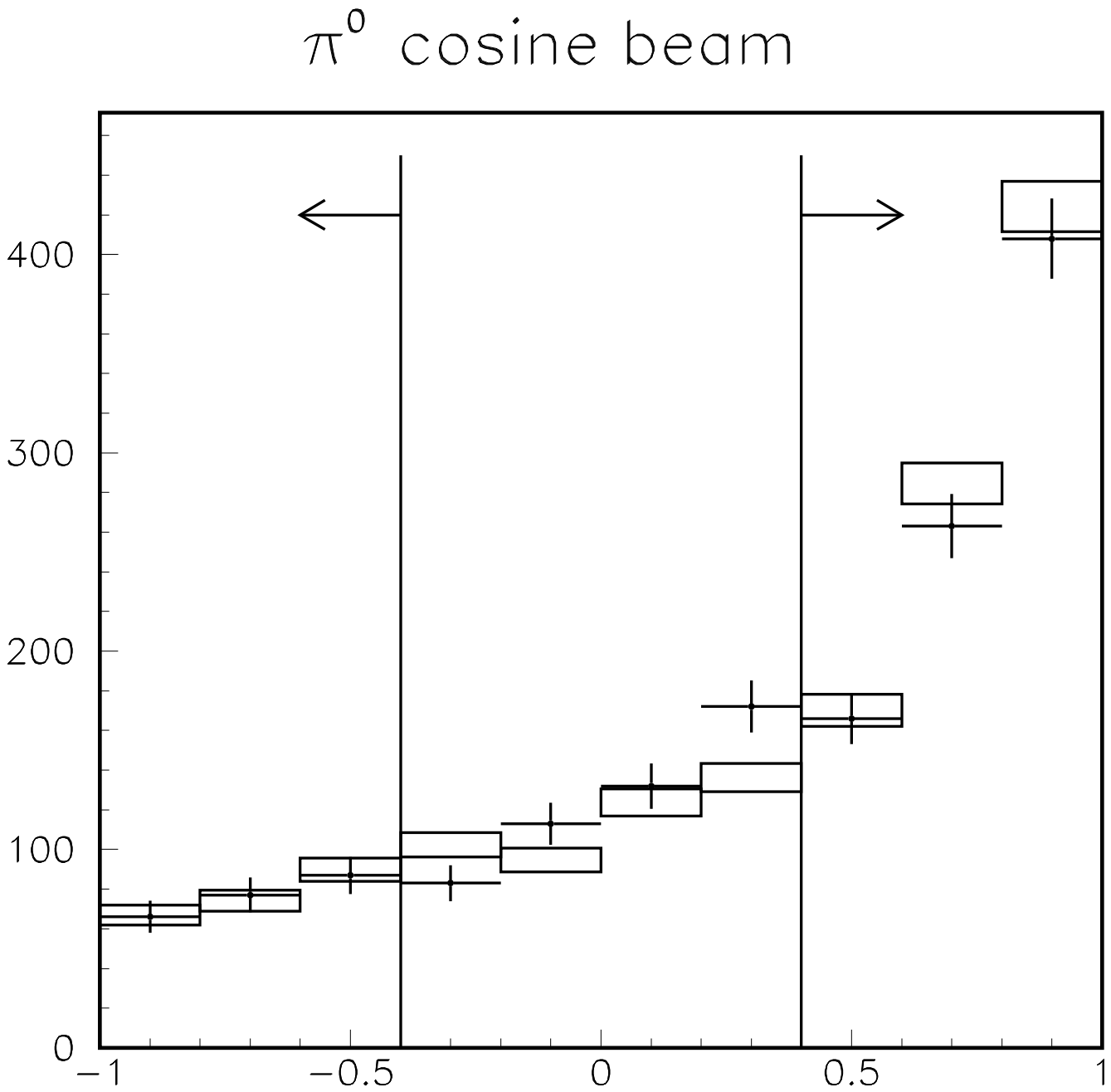
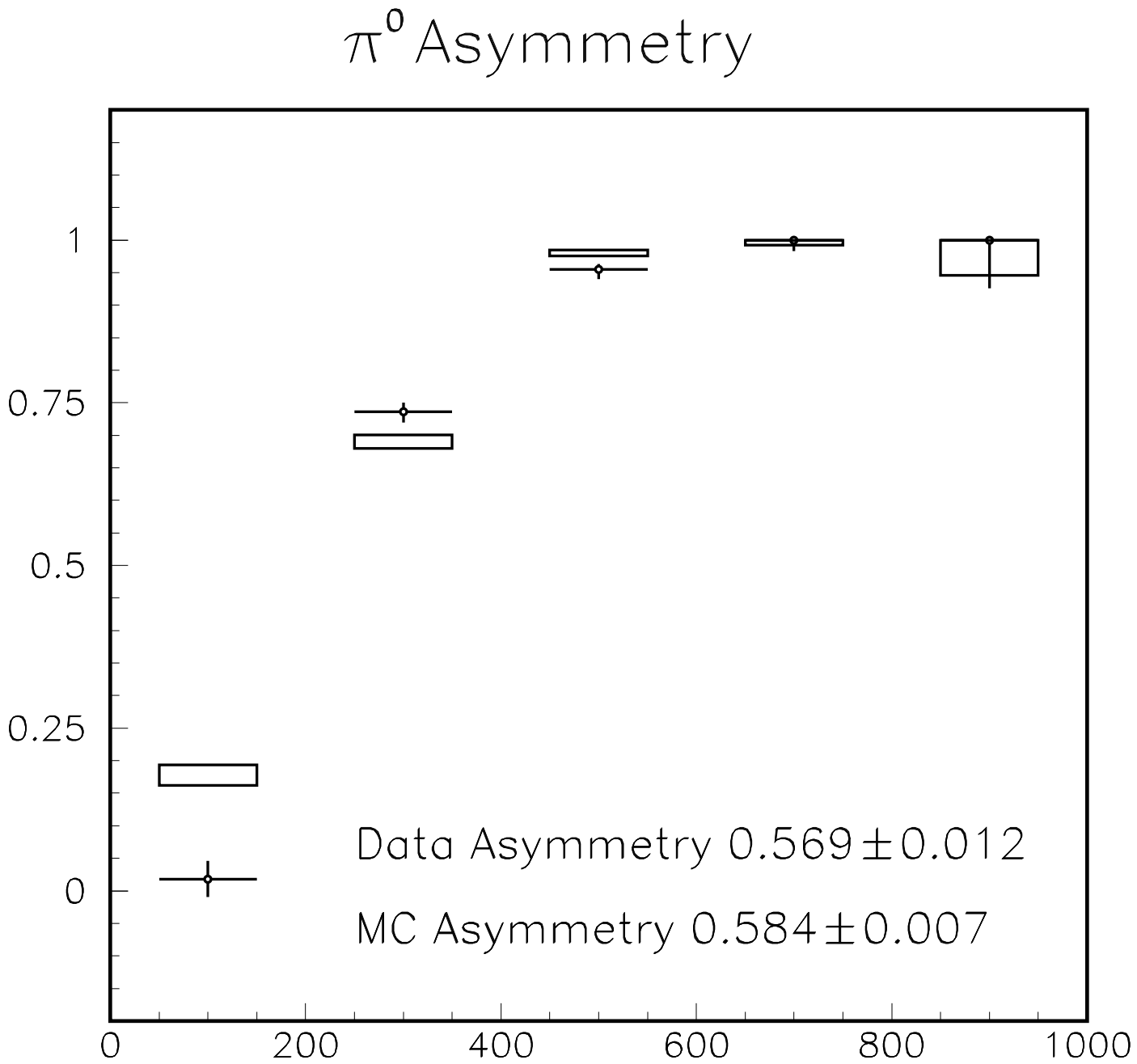
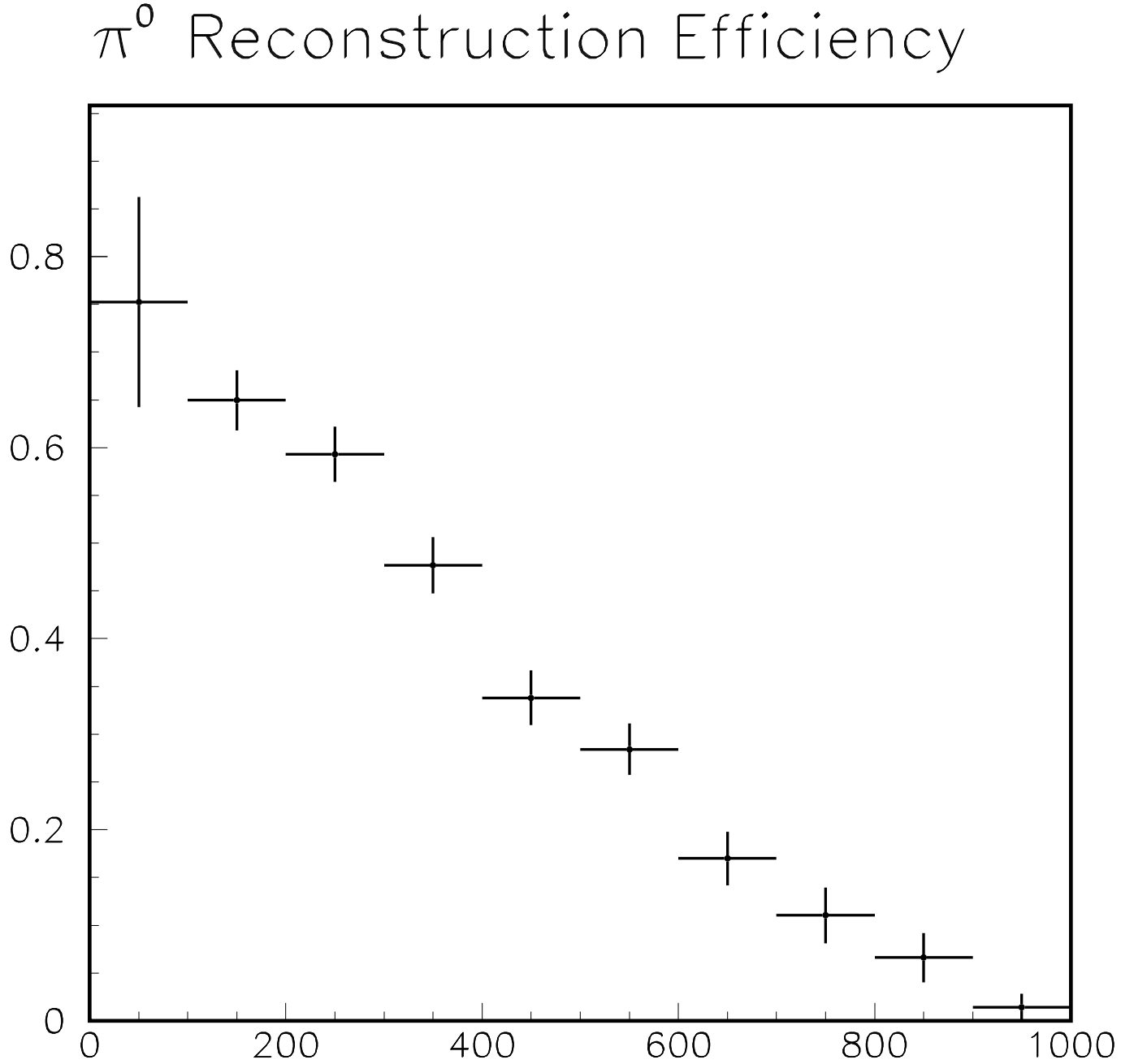
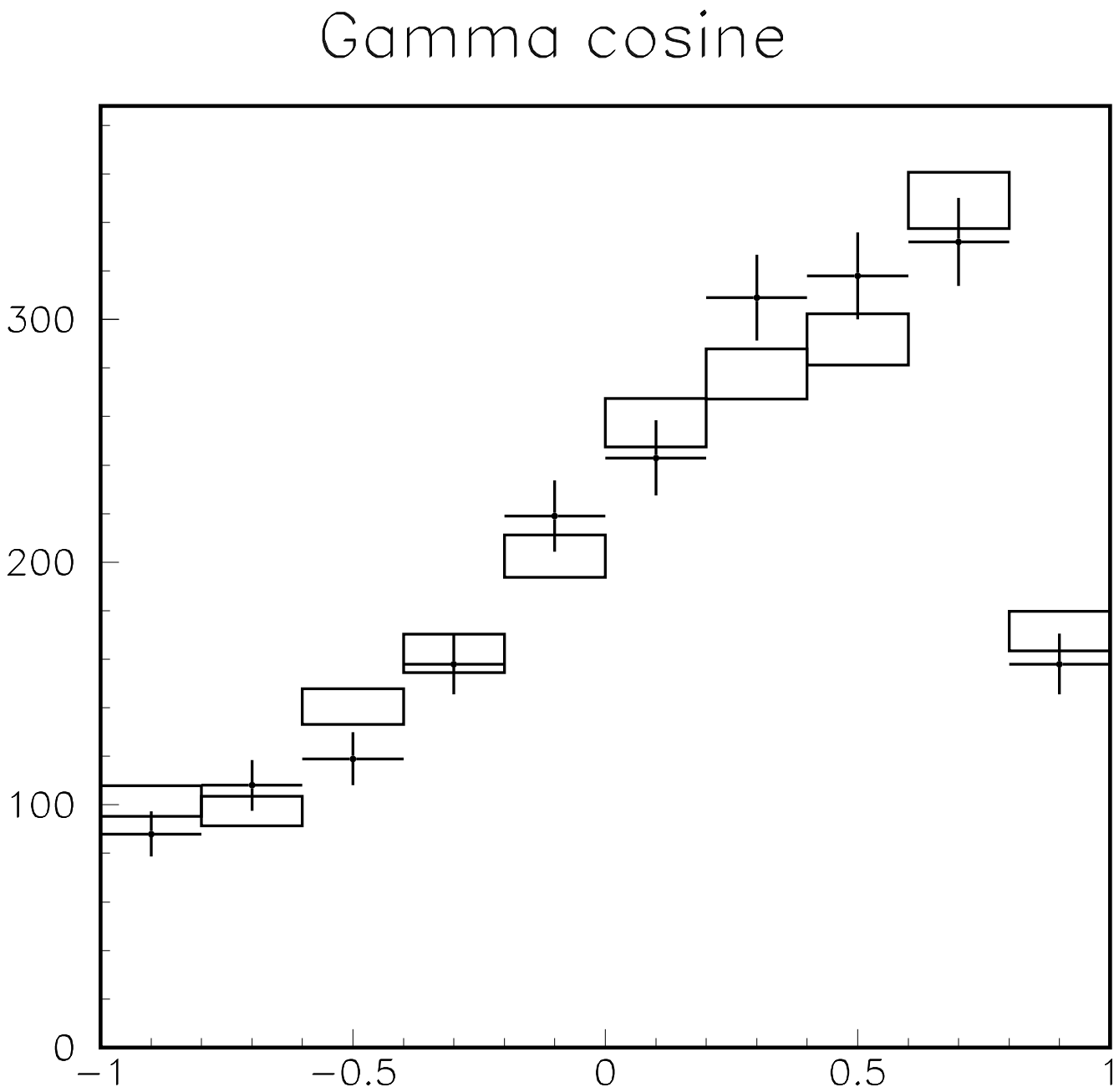

Invariant Mass of 2R e−like
200
150
100
50
0
50
100
150
200
250
300

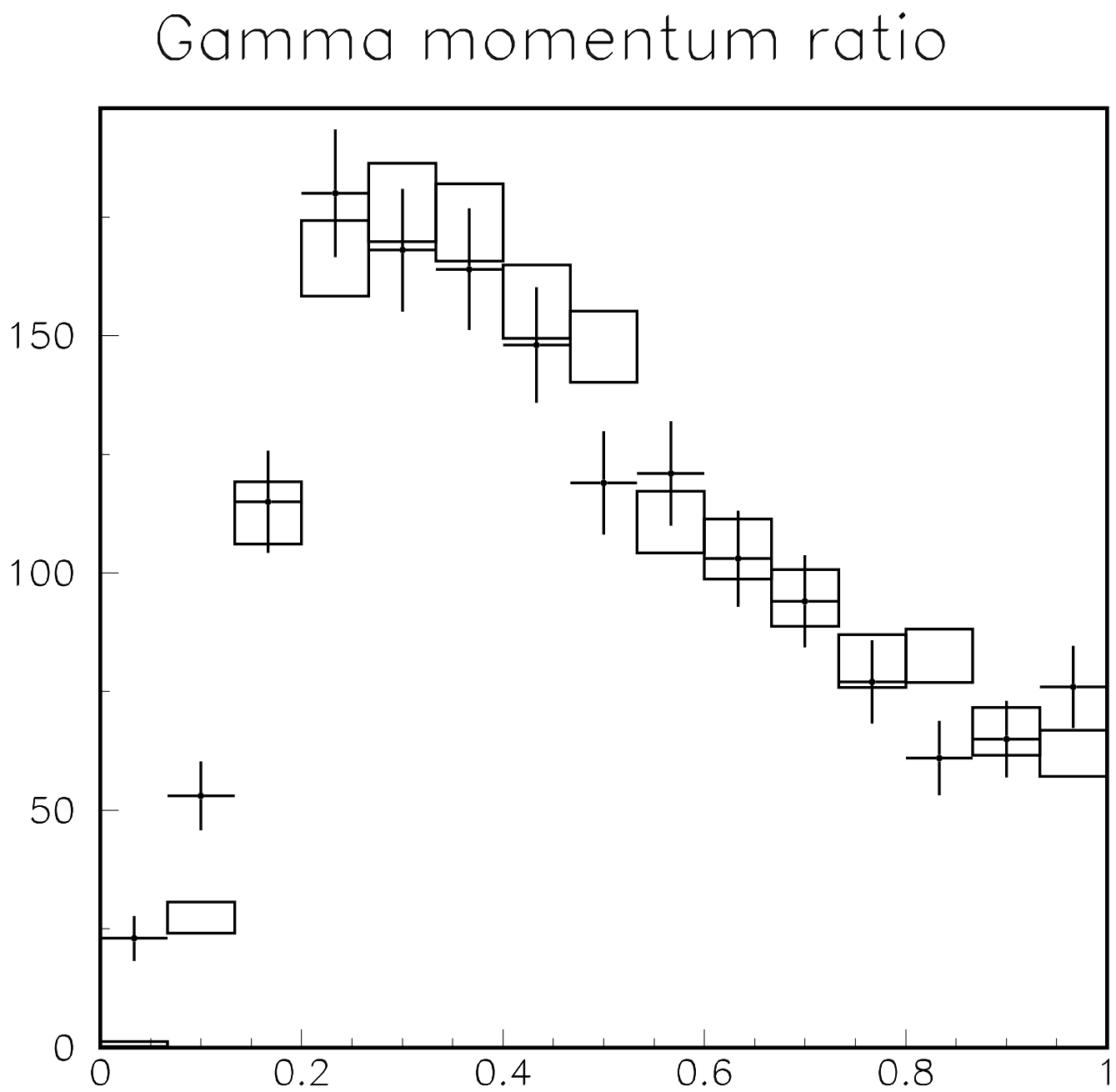

π^0 candidate momentum
500
400
300
200
100
0
0
200
400
600
800
1000

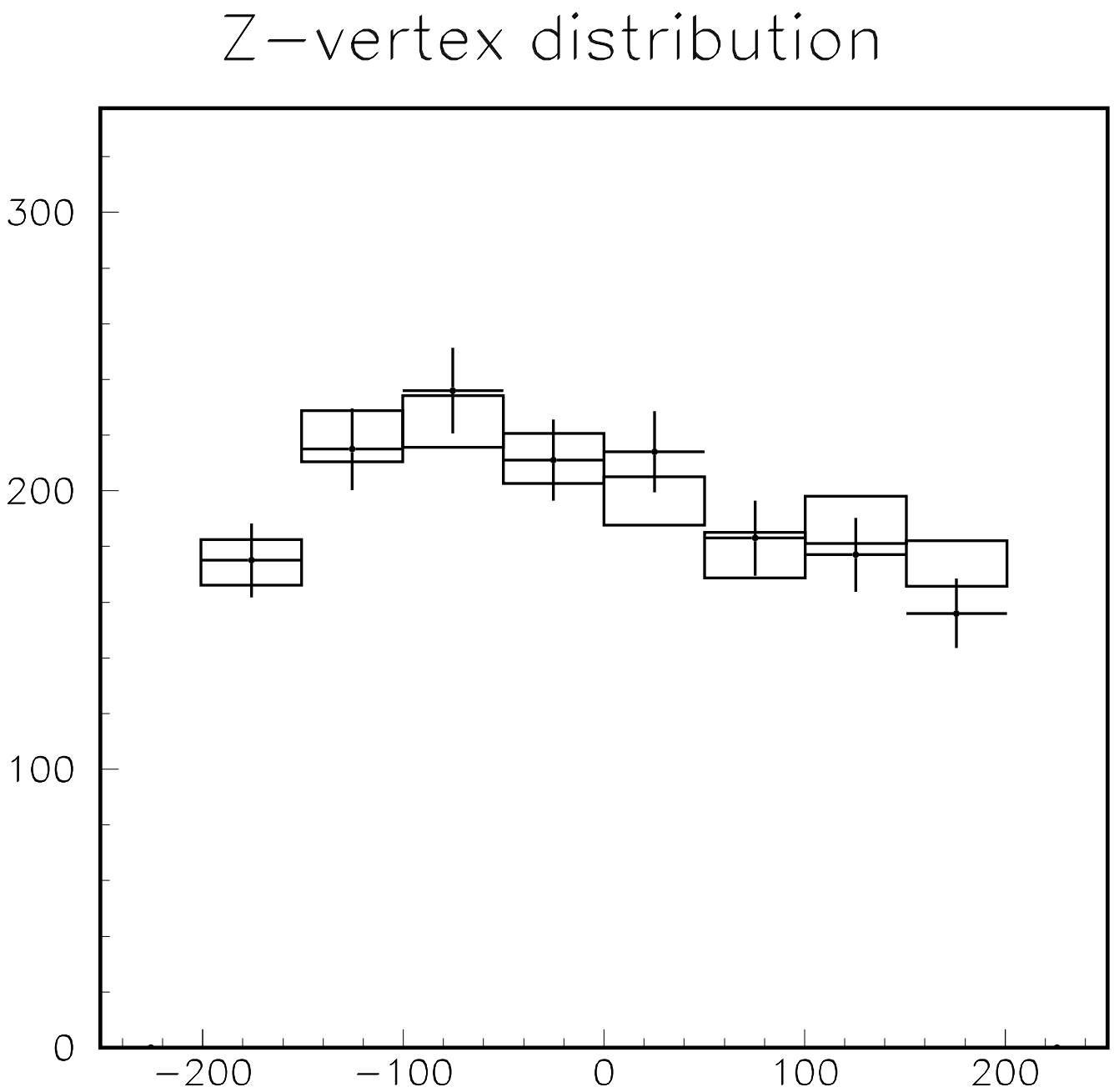

π^0 cosine beam
400
300
200
100
0
−1
−0.5
0
0.5
1

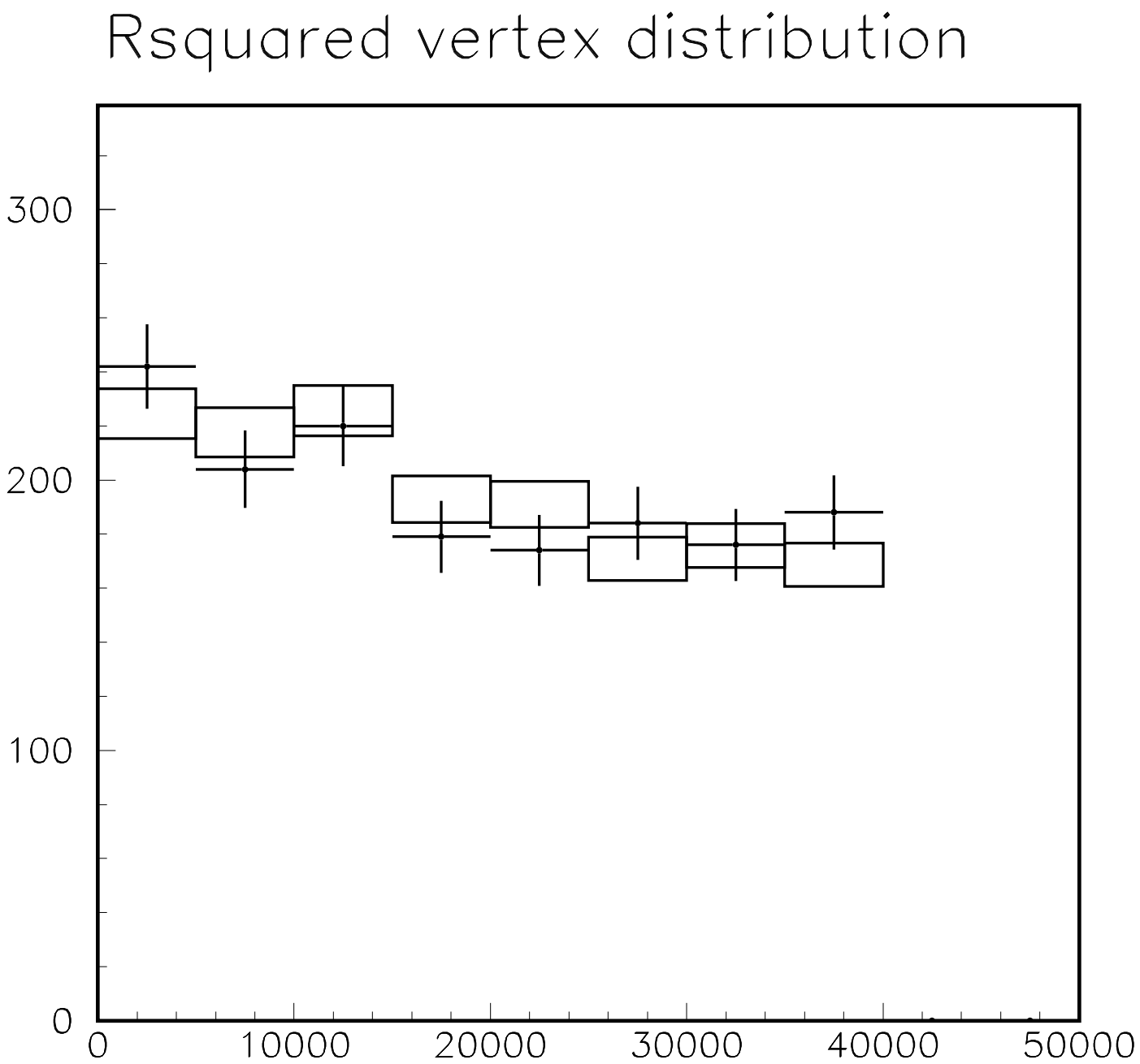

π^0 Asymmetry
1
0.75
0.5
0.25
0
0
200
400
600
800
1000
Data Asymmetry 0.569 ± 0.012
MC Asymmetry 0.584 ± 0.007

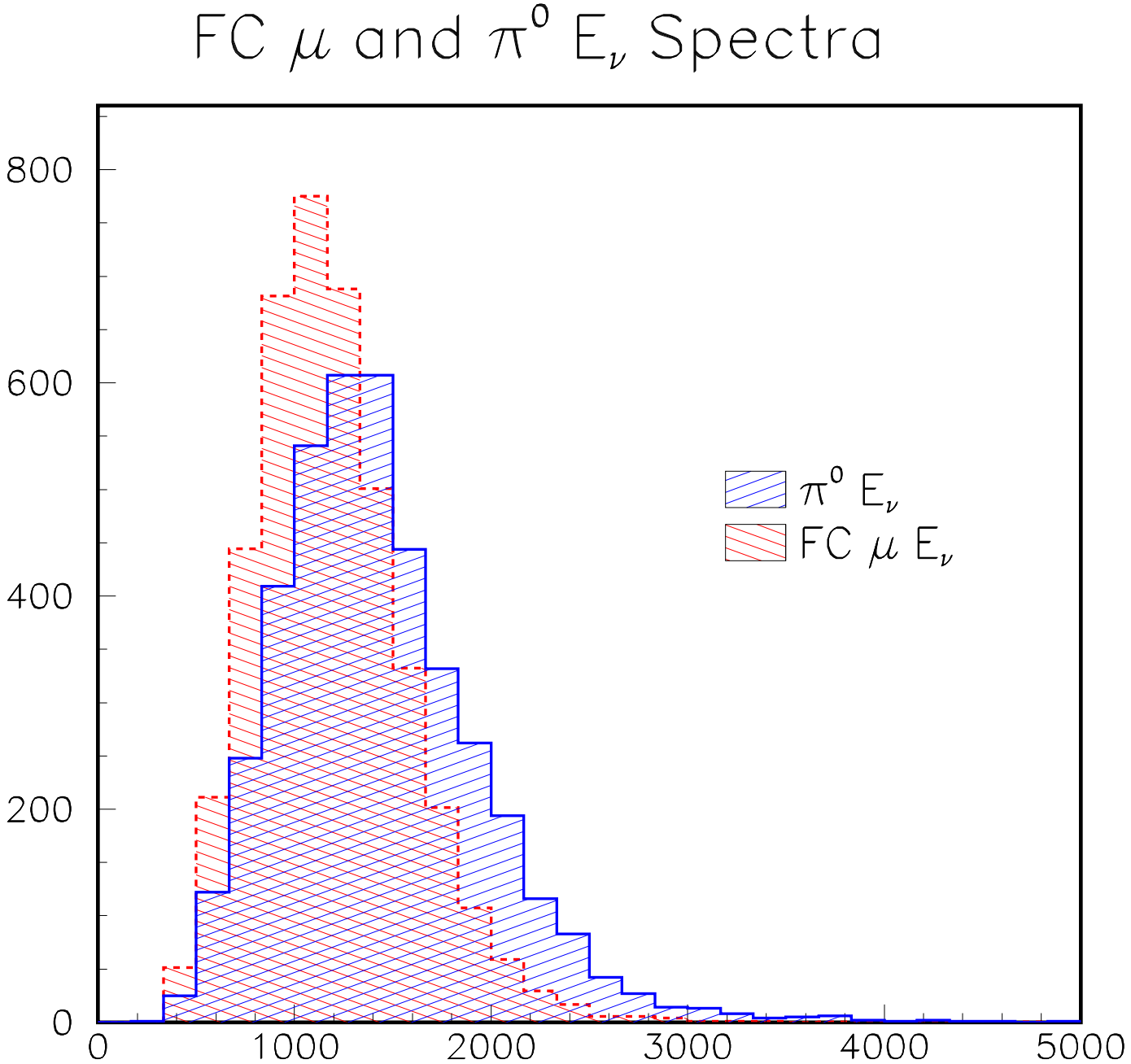

π^0 Reconstruction Efficiency
0.8
0.6
0.4
0.2
0
0
200
400
600
800
1000

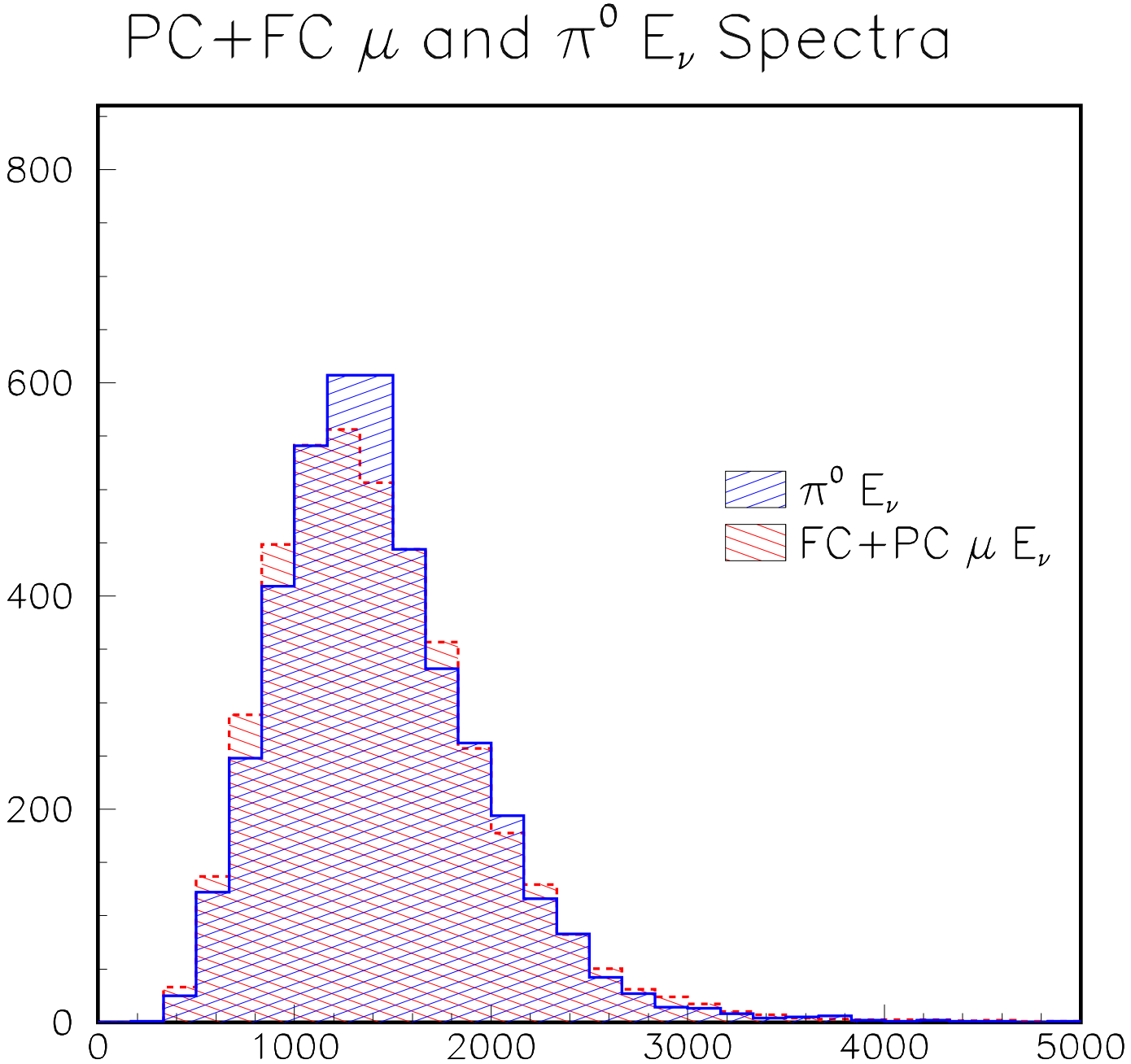

Gamma cosine
300
200
100
0
−1
−0.5
0
0.5
1

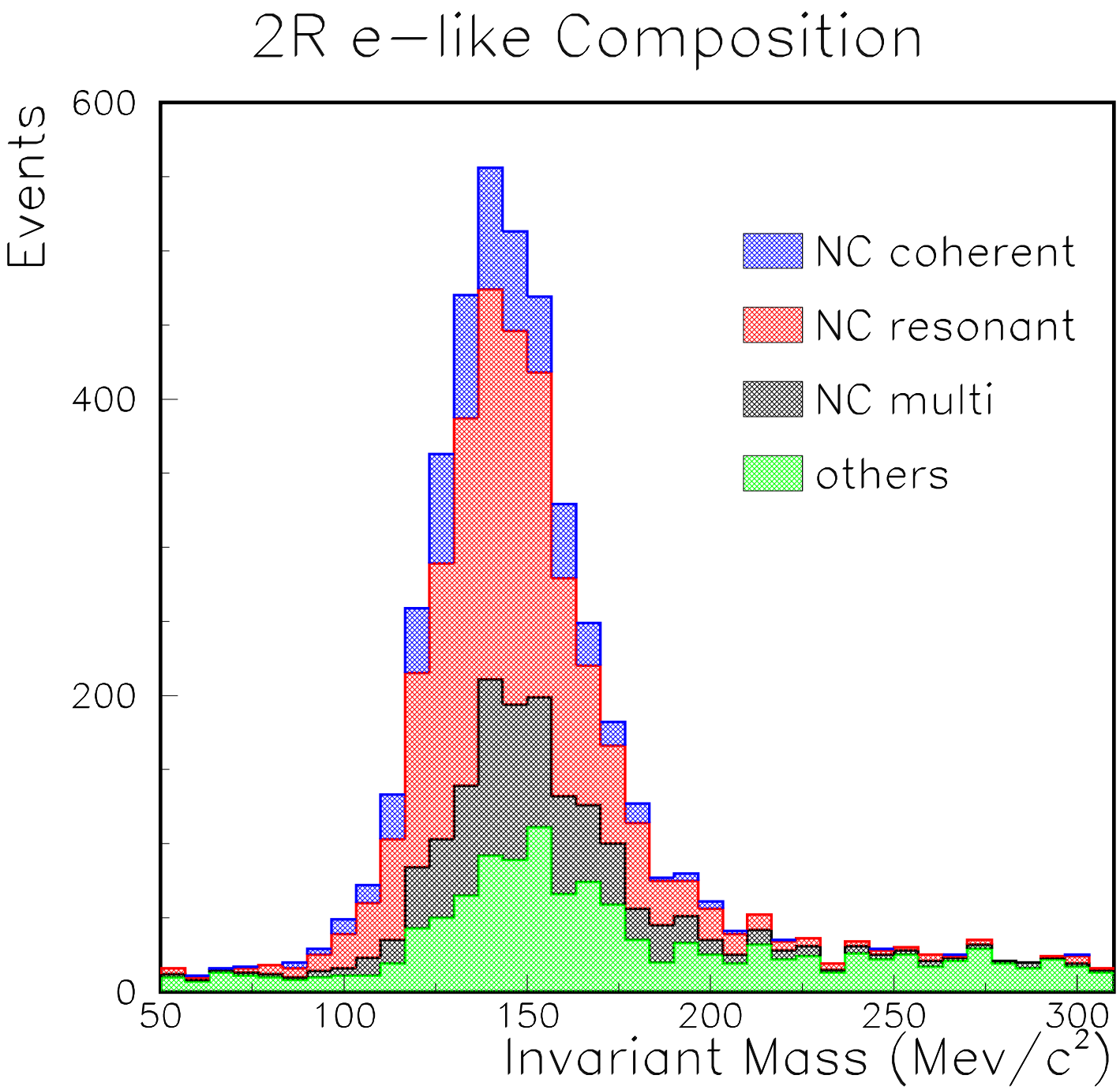

Gamma momentum ratio
150
100
50
0
0
0.2
0.4
0.6
0.8
1

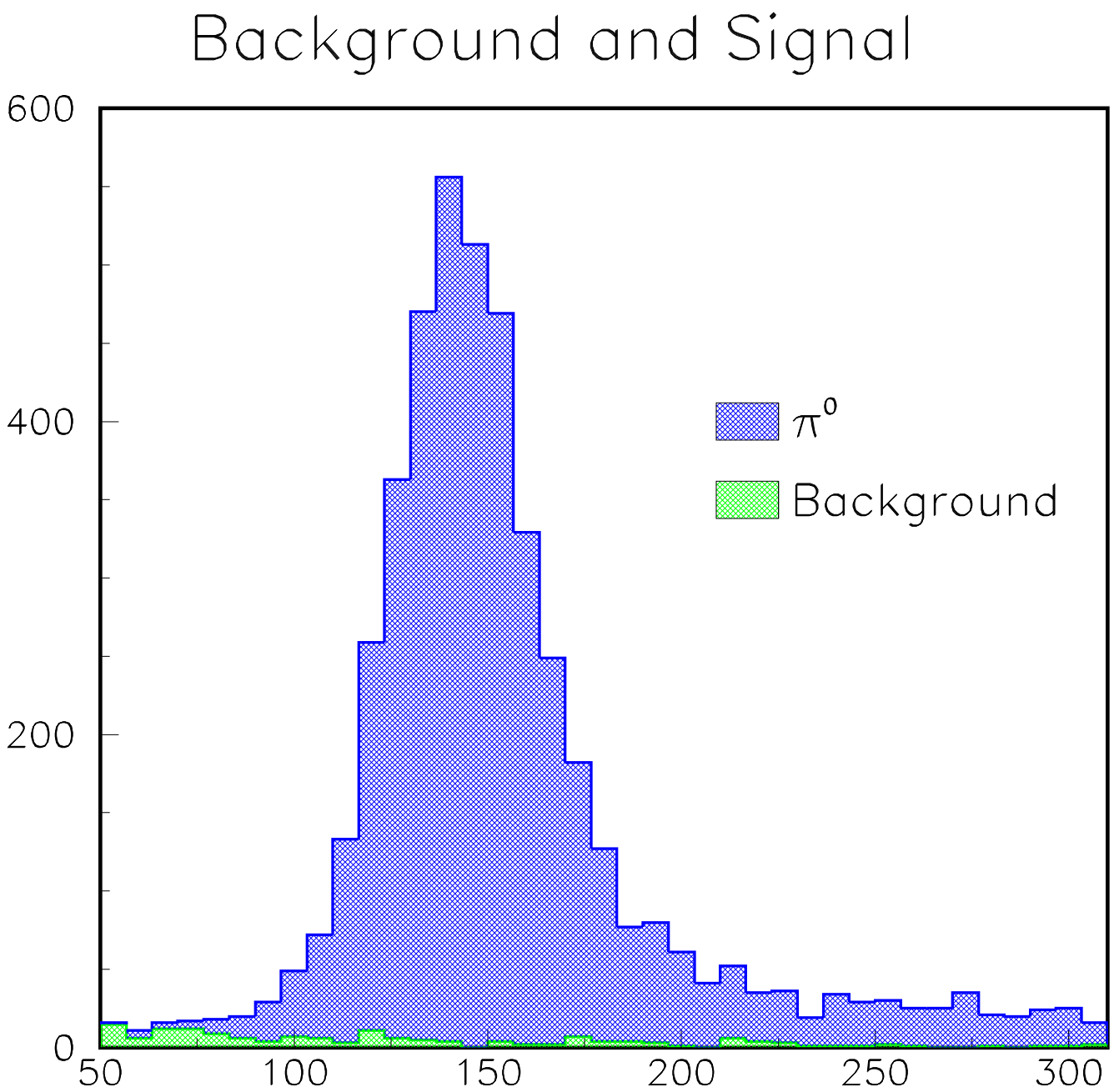

Z−vertex distribution
300
200
100
0
−200
−100
0
100
200

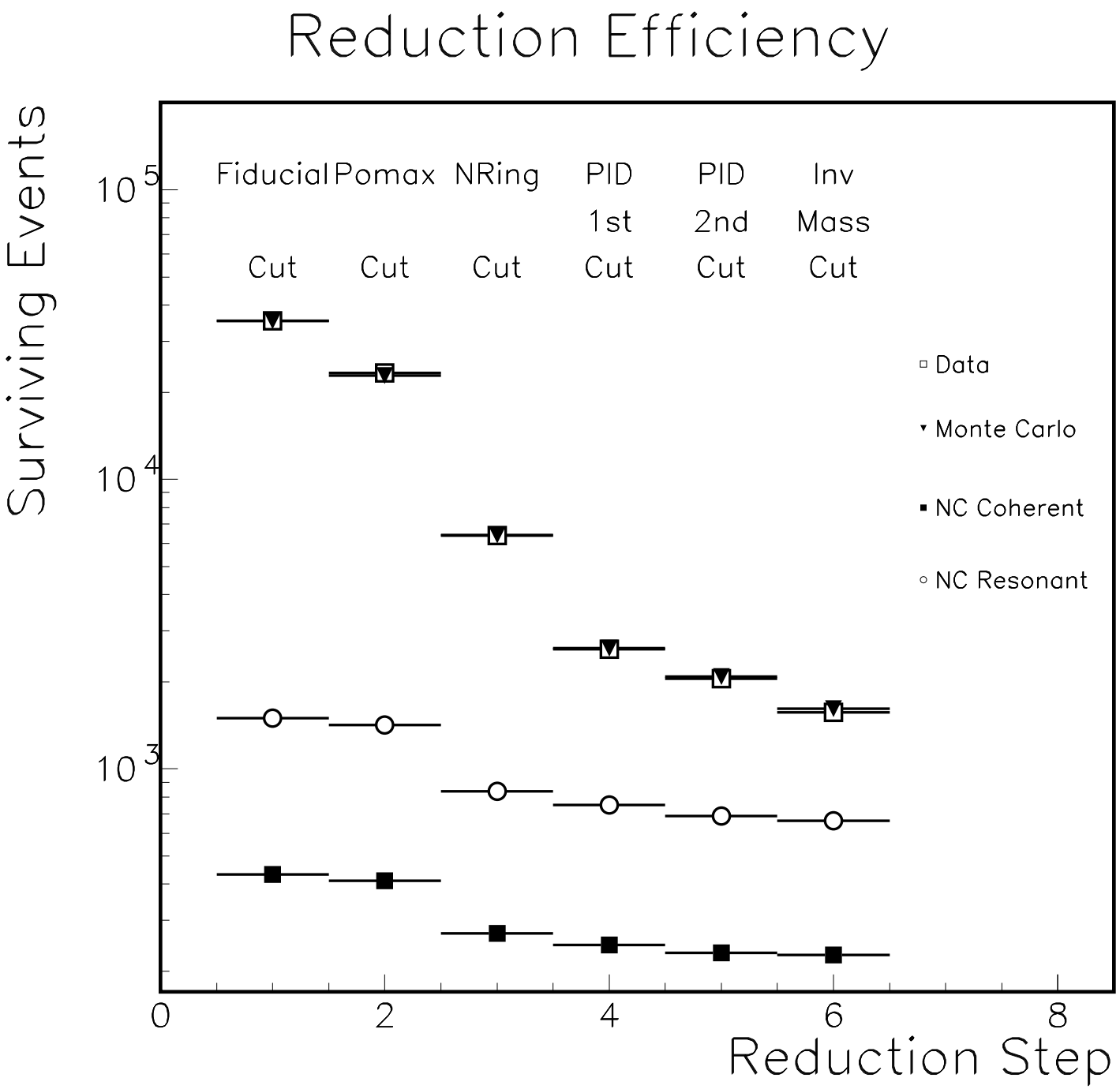

Rsquared vertex distribution
300
200
100
0
0
10000
20000
30000
40000
50000

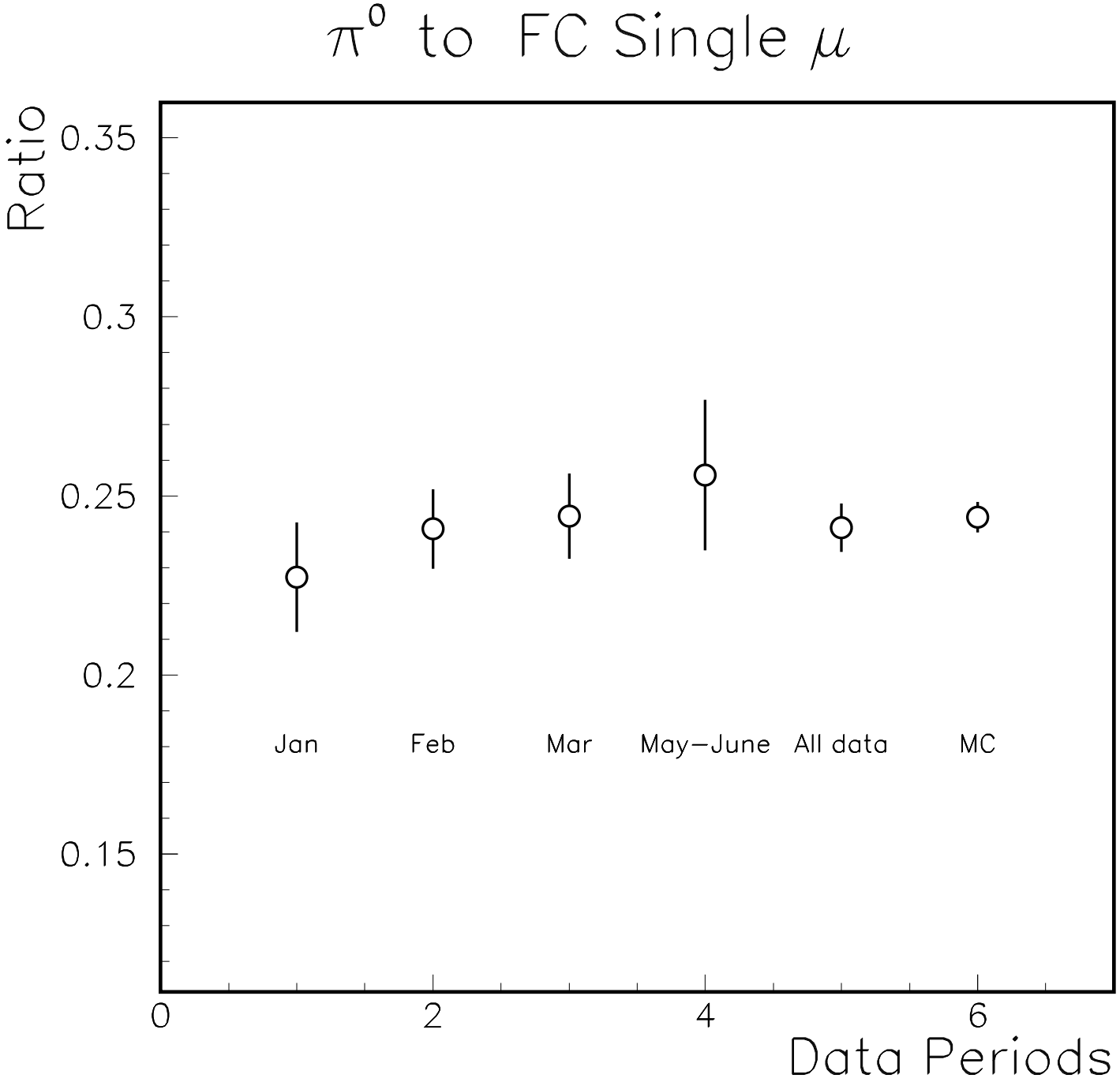

FC μ and π⁰ E_ν Spectra
800
600
400
200
0
0
1000
2000
3000
4000
5000
π⁰ E_ν
FC μ E_ν

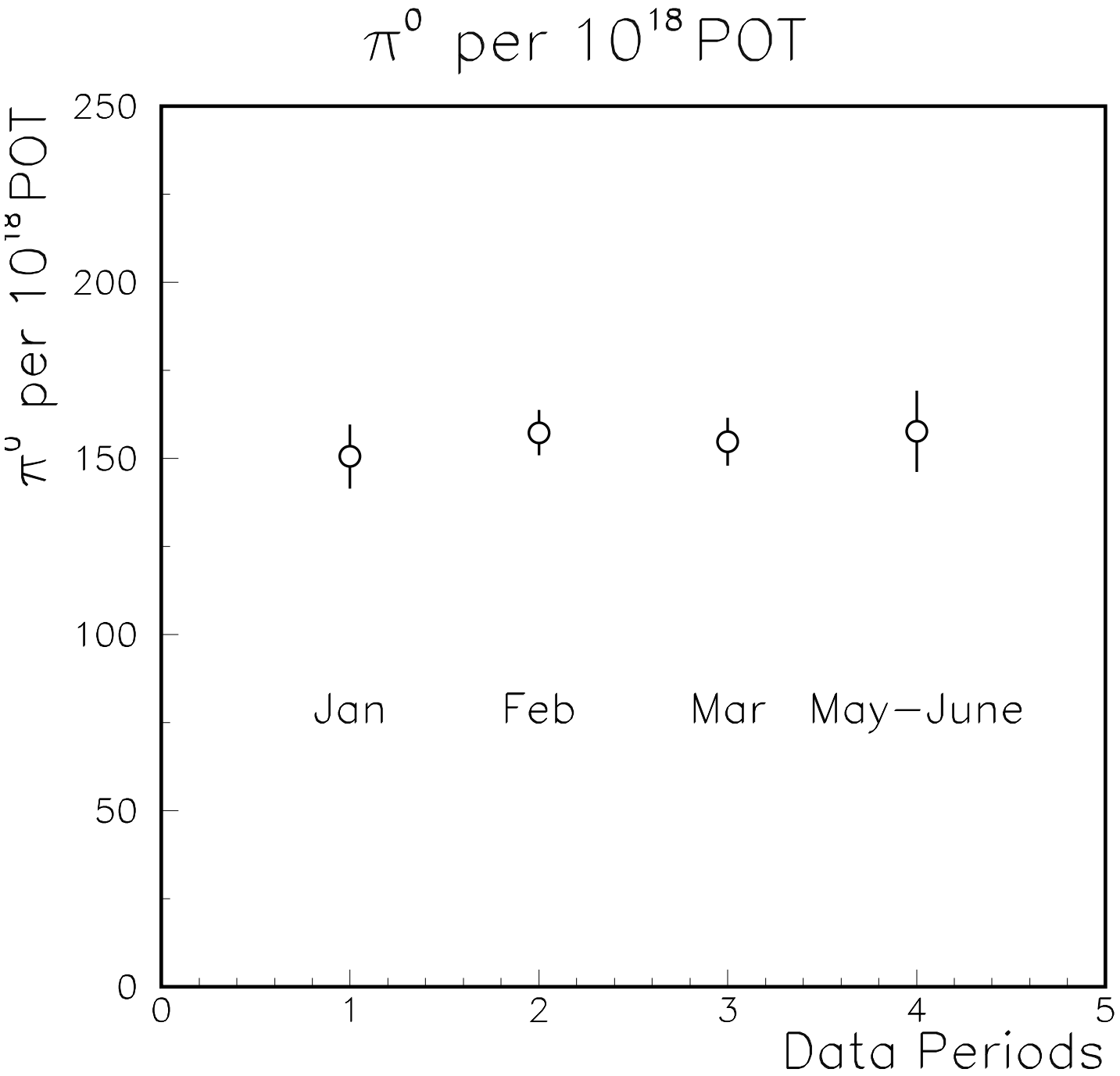

PC+FC μ and π⁰ Eν Spectra
800
600
400
200
0
0
1000
2000
3000
4000
5000
π⁰ Eν
FC+PC μ Eν


2R e−like Composition
Events
600
400
200
0
50
100
150
200
250
300
Invariant Mass (Mev/c²)
NC coherent
NC resonant
NC multi
others


Background and Signal
600
400
200
0
50
100
150
200
250
300
π^0
Background


Reduction Efficiency
Surviving Events
10^5
10^4
10^3
Fiducial Cut
Pomax Cut
NRing Cut
PID 1st Cut
PID 2nd Cut
Inv Mass Cut
Data
Monte Carlo
NC Coherent
NC Resonant
0
2
4
6
8
Reduction Step


π^0 to FC Single μ
Ratio
0.35
0.3
0.25
0.2
0.15
Jan
Feb
Mar
May−June
All data
MC
0
2
4
6
Data Periods


π^0 per 10^{18} POT
π^0 per 10^{18} POT
250
200
150
100
50
0
0
1
2
3
4
5
Jan
Feb
Mar
May–June
Data Periods