CohJ/ψ Analysis (**OS-$\mu\mu$**)(**Coil**)(**34-track**)

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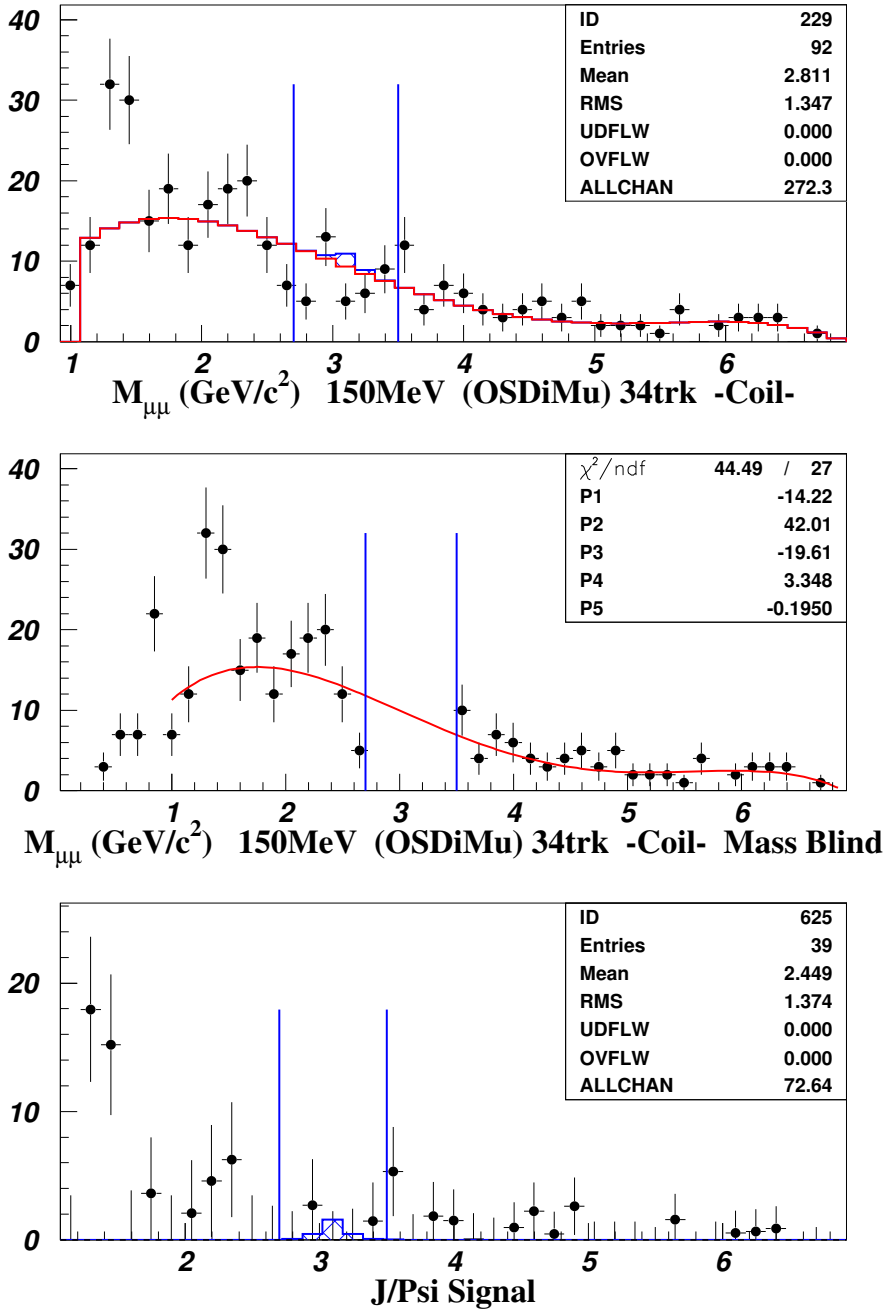
1 Zeroth Norms

	Gen Number	Zroth Norm
	4116629.0	1440000.0
CCDIS	2451852.2	547200.0
	337363.3	29.6
	409103.8	10000.0
JPsi	147680.4	7380.1
	384881.8	36000.0
OBG	418257.5	32000.0
	179844.8	5000.0
CohPi+	396271.9	21600.0
	193616.5	2160.0
CohRho+	189598.9	13680.0
	25235.8	1000.0
aNuMu CC	934139.8	50400.0
	4075.9	200.0
QE	4500.0	100.0
	4500.0	100.0
CohPi0	4500.0	100.0
	4500.0	100.0
Nue CC	4500.0	100.0
	4500.0	100.0
aNue CC	4500.0	100.0
	4500.0	100.0
aNuMu NC	824186.4	2000.0

Table 1: Generated Number of MC Events

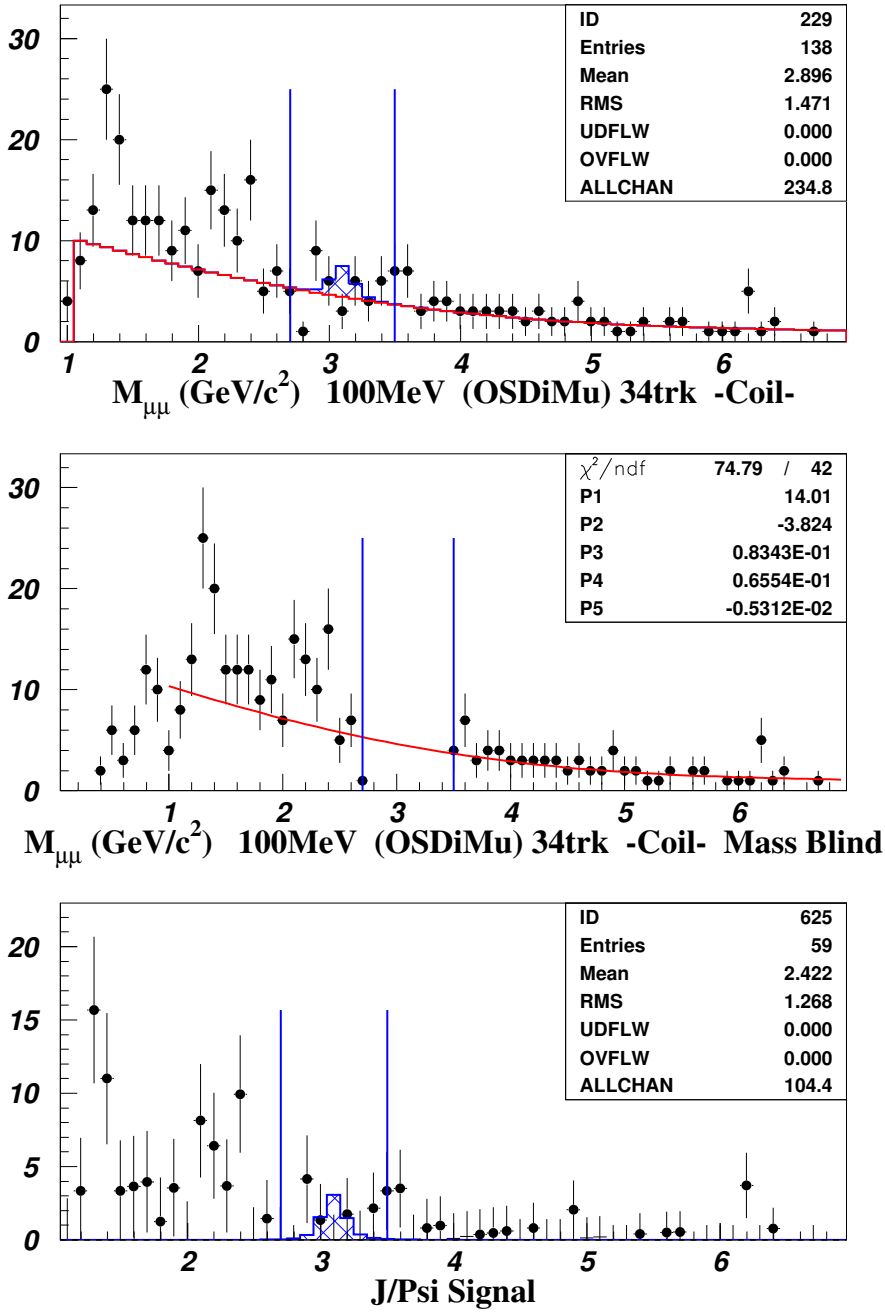
Extra Normalizations:

* Cohπ^+: 0.985 (From 2V0 analysis)
* Cohπ^0: 0.985 (From 2V0 analysis)
* Cohρ^+: 0.669 (From CohRho0 measurment)
* Cohρ^0: 0.669 (From CohRho0 measurment)
* OBG: 0.22 (from CohRho0 analysis)



Signal range	2.72-3.47
Number of signal	**4.18**
Background	46.84
Statistical error	6.16
Significance	**0.58**
Signal range	2.87-3.32
Number of signal	**2.70**
Background	28.08
Statistical error	4.90
Significance	**0.49**
Signal range	3.02-3.17
Number of signal	**0.00**
Background	9.36
Statistical error	2.24
Significance	**0.00**

Figure 1: 150MeV Data Fit. Signal MC set to calculations in 2nd range. **(./figs/data-fit-150mev.pdf)(sigcalc-150mev.tex)**



Signal range	2.75-3.45
Number of signal	**9.43**
Background	31.12
Statistical error	5.92
Significance	**1.48**
Signal range	2.85-3.35
Number of signal	**7.28**
Background	22.19
Statistical error	5.29
Significance	**1.34**
Signal range	2.95-3.25
Number of signal	**3.13**
Background	13.30
Statistical error	3.87
Significance	**0.77**

Figure 2: 100MeV Data Fit. Signal MC set to calculations in 2nd range. **(./figs/data-fit-100mev.pdf)(sigcalc-150mev.tex)**

2 MC χ^2 Fit

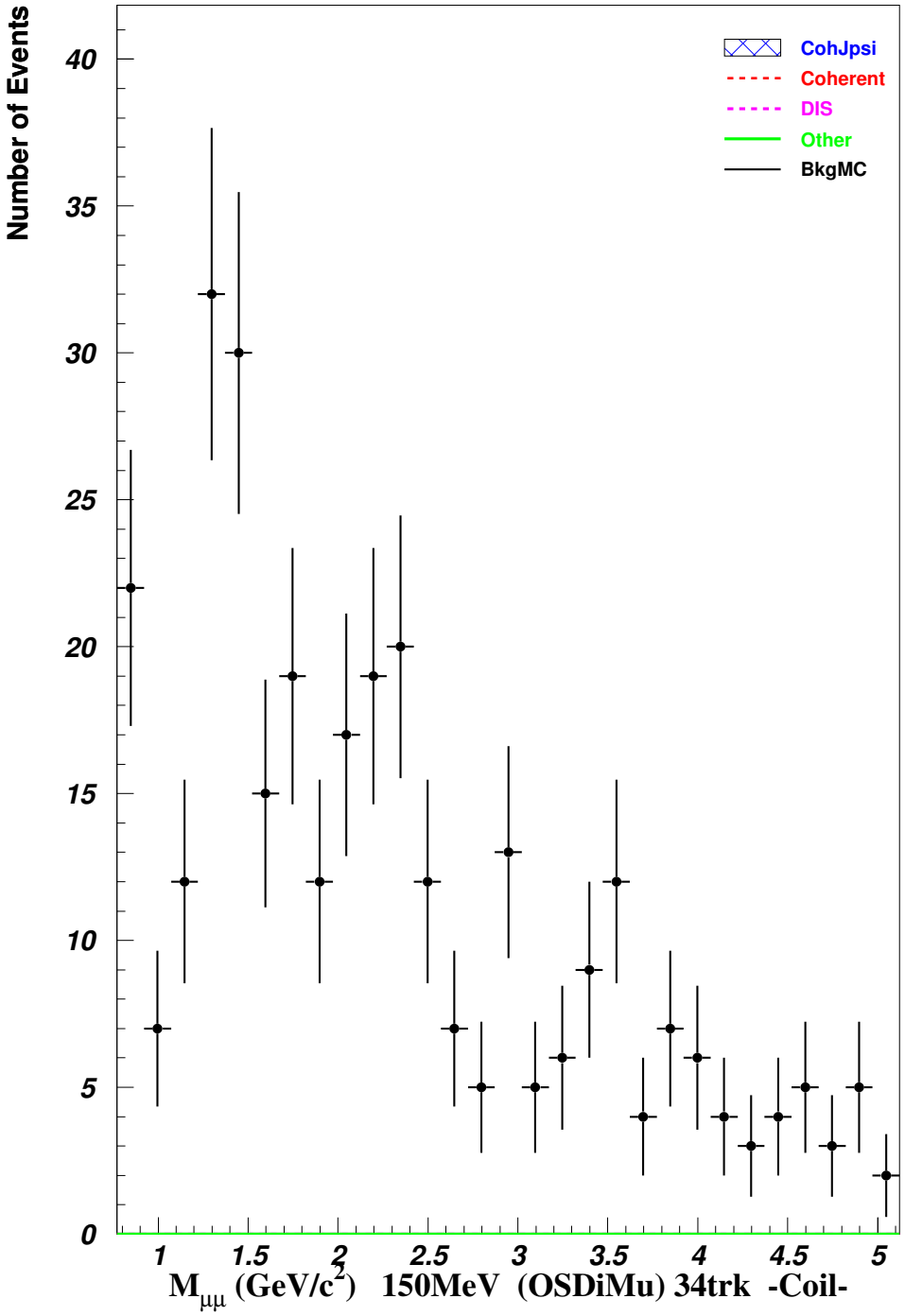


Figure 3: **(./figs/mass-0.9to5-150mev.pdf)**

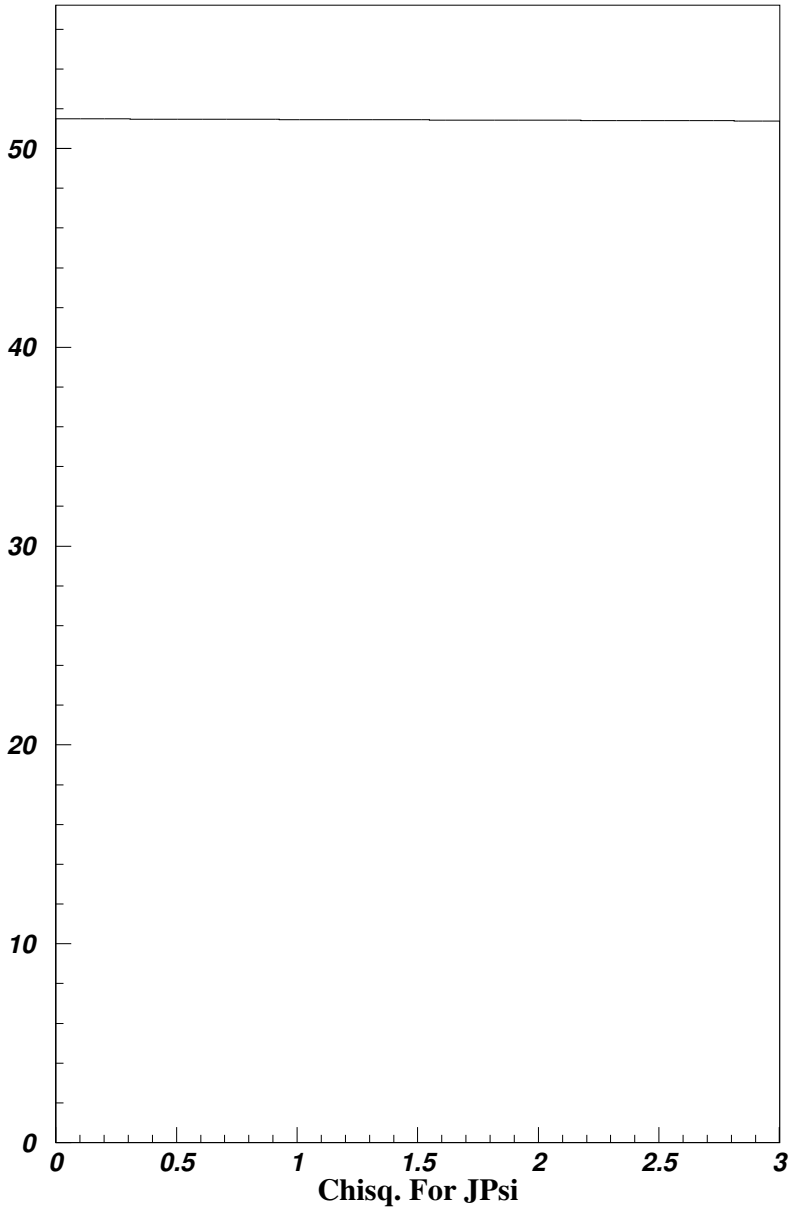


Figure 4: **(chisq-jpsi.pdf)**

χ^2 Min 51.383 Number of bins used: 29. One σ: 1.331		
	JPsi	
Norm at Min χ^2	3.000	
-1 σ	0.000	(100.0%)
$+1$ σ	3.000	(0.0%)

Table 2: χ^2 for JPsi on plot: 'Mmumu'

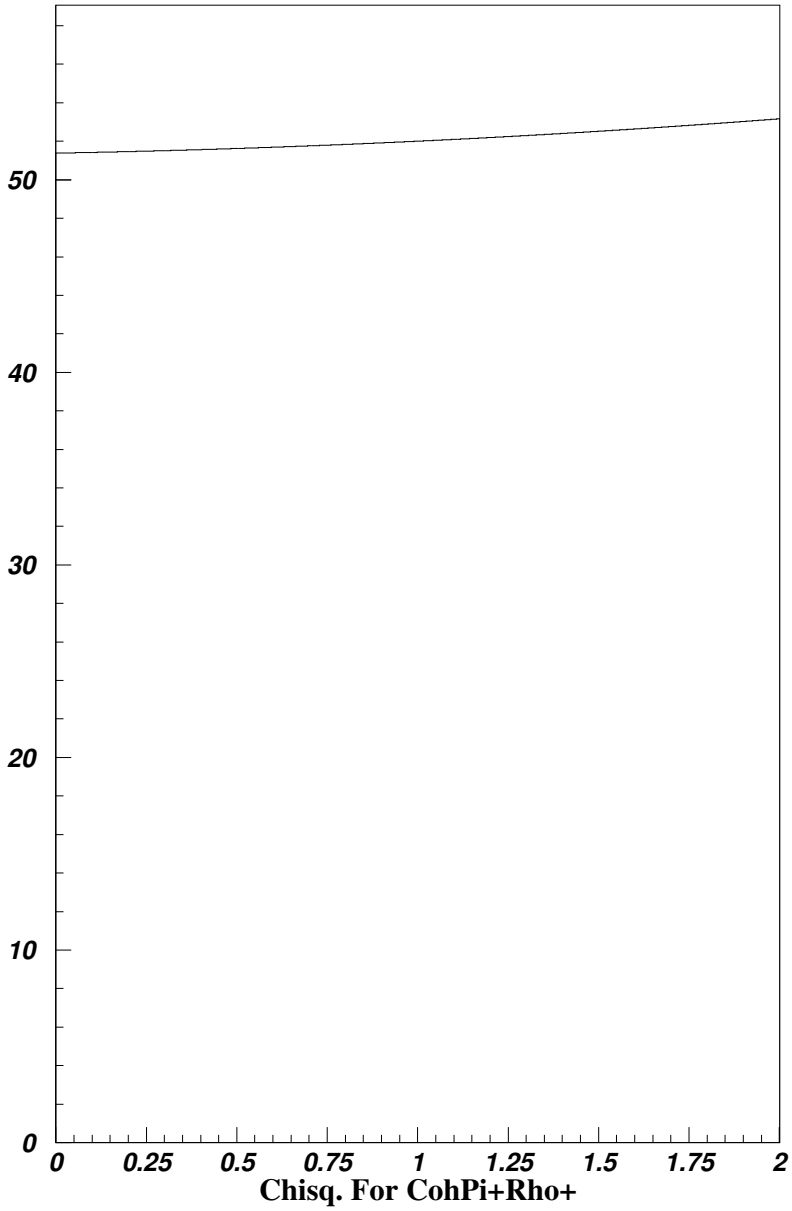


Figure 5: **(chisq-cohpip.pdf)**

χ^2 Min 51.383 Number of bins used: 29. One σ: 1.331		
	CohPi+Rho+	
Norm at Min χ^2	0.000	
-1 σ	0.000	(-nan%)
$+1$ σ	1.661	(inf%)

Table 3: χ^2 for CohPi+Rho+ on plot: 'Mmumu'

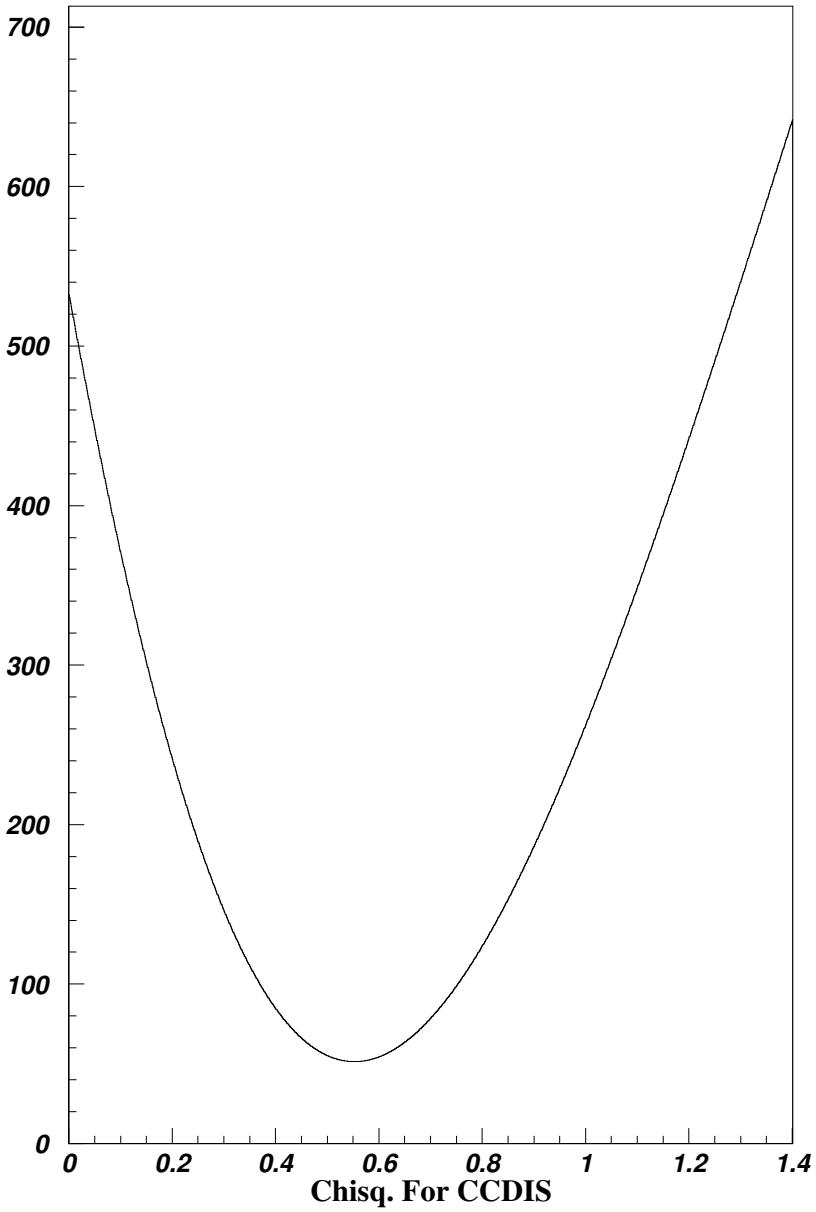


Figure 6: **(chisq-ccdis.pdf)**

χ^2 Min 51.383 Number of bins used: 29. One σ: 1.331		
	CCDIS	
Norm at Min χ^2	0.552	
-1 σ	0.521	(5.6%)
$+1$ σ	0.583	(5.6%)

Table 4: χ^2 for CCDIS on plot: 'Mmumu'

3 Summary Cut Tables

Cut Name	CCDIS	Cohπ^+	Cohρ^+	CohJ/ψ	Other	Total	Data
1) Raw Events	0.0	0.0	0.0	0.0	0.0	0.0	10516.0
2) OBGfid,Trig+CohGenTh	0.0	0.0	0.0	0.0	0.0	0.0	10516.0
3) Pfermi & W2	0.0	0.0	0.0	0.0	0.0	0.0	10516.0
4) Fid. Vol. -X	0.0	0.0	0.0	0.0	0.0	0.0	9348.0
5) Fid. Vol. -Y	0.0	0.0	0.0	0.0	0.0	0.0	8779.0
6) Fid. Vol. -Z (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	8459.0
7) At Least 1 Mu	0.0	0.0	0.0	0.0	0.0	0.0	8459.0
8) ncand=2,3,4	0.0	0.0	0.0	0.0	0.0	0.0	8459.0
9) tnchgd=2	0.0	0.0	0.0	0.0	0.0	0.0	8459.0
10) +/- Tracks (V0)	0.0	0.0	0.0	0.0	0.0	0.0	8459.0
11) Tube/Veto Cut	0.0	0.0	0.0	0.0	0.0	0.0	6304.0
12) 2 Muons (1mux)	0.0	0.0	0.0	0.0	0.0	0.0	6304.0
13) PmuAsym¡0.0	0.0	0.0	0.0	0.0	0.0	0.0	5775.0
14) Theta<2.62 rad	0.0	0.0	0.0	0.0	0.0	0.0	1022.0
15) Pt+wrt- >0.05	0.0	0.0	0.0	0.0	0.0	0.0	1018.0
16) Mee > 2.0 (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	1018.0
17) Upstream Hanger cut	0.0	0.0	0.0	0.0	0.0	0.0	1018.0
18) nsecond<4	0.0	0.0	0.0	0.0	0.0	0.0	1018.0
19) Fid. Vol. Hanger cut	0.0	0.0	0.0	0.0	0.0	0.0	732.0
20) No Hangers fromPVert	0.0	0.0	0.0	0.0	0.0	0.0	508.0
21) Pz>0 for tracks	0.0	0.0	0.0	0.0	0.0	0.0	508.0
22) Thprimord<0.4	0.0	0.0	0.0	0.0	0.0	0.0	508.0
23) Nunh*fracunh<200	0.0	0.0	0.0	0.0	0.0	0.0	389.0
24) Emumu>2GeV	0.0	0.0	0.0	0.0	0.0	0.0	338.0
25) P+,P->0.5	0.0	0.0	0.0	0.0	0.0	0.0	338.0
26) P+,P->1.0 (2.5mux)	0.0	0.0	0.0	0.0	0.0	0.0	338.0
27) Emumu>5GeV (8mux)	0.0	0.0	0.0	0.0	0.0	0.0	338.0
28) Phi12>90deg (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	338.0
29) Pmumu>10GeV (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	338.0
30) No cut, not set	0.0	0.0	0.0	0.0	0.0	0.0	338.0

Table 5: Summary Cut Table **(all events)**

Cut Name	CCDIS	Cohπ^+	Cohρ^+	CohJ/ψ	Other	Total	Data
1) Raw Events	0.0	0.0	0.0	0.0	0.0	0.0	9021.0
2) OBGfid,Trig+CohGenTh	0.0	0.0	0.0	0.0	0.0	0.0	9021.0
3) Pfermi & W2	0.0	0.0	0.0	0.0	0.0	0.0	9021.0
4) Fid. Vol. -X	0.0	0.0	0.0	0.0	0.0	0.0	8002.0
5) Fid. Vol. -Y	0.0	0.0	0.0	0.0	0.0	0.0	7511.0
6) Fid. Vol. -Z (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	7231.0
7) At Least 1 Mu	0.0	0.0	0.0	0.0	0.0	0.0	7231.0
8) ncand=2,3,4	0.0	0.0	0.0	0.0	0.0	0.0	7231.0
9) tnchgd=2	0.0	0.0	0.0	0.0	0.0	0.0	7231.0
10) +/- Tracks (V0)	0.0	0.0	0.0	0.0	0.0	0.0	7231.0
11) Tube/Veto Cut	0.0	0.0	0.0	0.0	0.0	0.0	5358.0
12) 2 Muons (1mux)	0.0	0.0	0.0	0.0	0.0	0.0	5358.0
13) PmuAsym¡0.0	0.0	0.0	0.0	0.0	0.0	0.0	4891.0
14) Theta<2.62 rad	0.0	0.0	0.0	0.0	0.0	0.0	902.0
15) Pt+wrt- >0.05	0.0	0.0	0.0	0.0	0.0	0.0	898.0
16) Mee > 2.0 (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	898.0
17) Upstream Hanger cut	0.0	0.0	0.0	0.0	0.0	0.0	898.0
18) nsecond<4	0.0	0.0	0.0	0.0	0.0	0.0	898.0
19) Fid. Vol. Hanger cut	0.0	0.0	0.0	0.0	0.0	0.0	643.0
20) No Hangers fromPVert	0.0	0.0	0.0	0.0	0.0	0.0	449.0
21) Pz>0 for tracks	0.0	0.0	0.0	0.0	0.0	0.0	449.0
22) Thprimord<0.4	0.0	0.0	0.0	0.0	0.0	0.0	449.0
23) Nunh*fracunh<200	0.0	0.0	0.0	0.0	0.0	0.0	345.0
24) Emumu>2GeV	0.0	0.0	0.0	0.0	0.0	0.0	299.0
25) P+,P->0.5	0.0	0.0	0.0	0.0	0.0	0.0	299.0
26) P+,P->1.0 (2.5mux)	0.0	0.0	0.0	0.0	0.0	0.0	299.0
27) Emumu>5GeV (8mux)	0.0	0.0	0.0	0.0	0.0	0.0	299.0
28) Phi12>90deg (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	299.0
29) Pmumu>10GeV (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	299.0
30) No cut, not set	0.0	0.0	0.0	0.0	0.0	0.0	299.0

Table 6: Summary Cut Table **(mass blind)**

Cut Name	CCDIS	Cohπ^+	Cohρ^+	CohJ/ψ	Other	Total	Data
1) Raw Events	0.0	0.0	0.0	0.0	0.0	0.0	1495.0
2) OBGfid,Trig+CohGenTh	0.0	0.0	0.0	0.0	0.0	0.0	1495.0
3) Pfermi & W2	0.0	0.0	0.0	0.0	0.0	0.0	1495.0
4) Fid. Vol. -X	0.0	0.0	0.0	0.0	0.0	0.0	1346.0
5) Fid. Vol. -Y	0.0	0.0	0.0	0.0	0.0	0.0	1268.0
6) Fid. Vol. -Z (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	1228.0
7) At Least 1 Mu	0.0	0.0	0.0	0.0	0.0	0.0	1228.0
8) ncand=2,3,4	0.0	0.0	0.0	0.0	0.0	0.0	1228.0
9) tnchgd=2	0.0	0.0	0.0	0.0	0.0	0.0	1228.0
10) +/- Tracks (V0)	0.0	0.0	0.0	0.0	0.0	0.0	1228.0
11) Tube/Veto Cut	0.0	0.0	0.0	0.0	0.0	0.0	946.0
12) 2 Muons (1mux)	0.0	0.0	0.0	0.0	0.0	0.0	946.0
13) PmuAsym¡0.0	0.0	0.0	0.0	0.0	0.0	0.0	884.0
14) Theta<2.62 rad	0.0	0.0	0.0	0.0	0.0	0.0	120.0
15) Pt+wrt- >0.05	0.0	0.0	0.0	0.0	0.0	0.0	120.0
16) Mee > 2.0 (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	120.0
17) Upstream Hanger cut	0.0	0.0	0.0	0.0	0.0	0.0	120.0
18) nsecond<4	0.0	0.0	0.0	0.0	0.0	0.0	120.0
19) Fid. Vol. Hanger cut	0.0	0.0	0.0	0.0	0.0	0.0	89.0
20) No Hangers fromPVert	0.0	0.0	0.0	0.0	0.0	0.0	59.0
21) Pz>0 for tracks	0.0	0.0	0.0	0.0	0.0	0.0	59.0
22) Thprimord<0.4	0.0	0.0	0.0	0.0	0.0	0.0	59.0
23) Nunh*fracunh<200	0.0	0.0	0.0	0.0	0.0	0.0	44.0
24) Emumu>2GeV	0.0	0.0	0.0	0.0	0.0	0.0	39.0
25) P+,P->0.5	0.0	0.0	0.0	0.0	0.0	0.0	39.0
26) P+,P->1.0 (2.5mux)	0.0	0.0	0.0	0.0	0.0	0.0	39.0
27) Emumu>5GeV (8mux)	0.0	0.0	0.0	0.0	0.0	0.0	39.0
28) Phi12>90deg (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	39.0
29) Pmumu>10GeV (OFF)	0.0	0.0	0.0	0.0	0.0	0.0	39.0
30) No cut, not set	0.0	0.0	0.0	0.0	0.0	0.0	39.0

Table 7: Summary Cut Table **(mass sig.)**

4 Plots

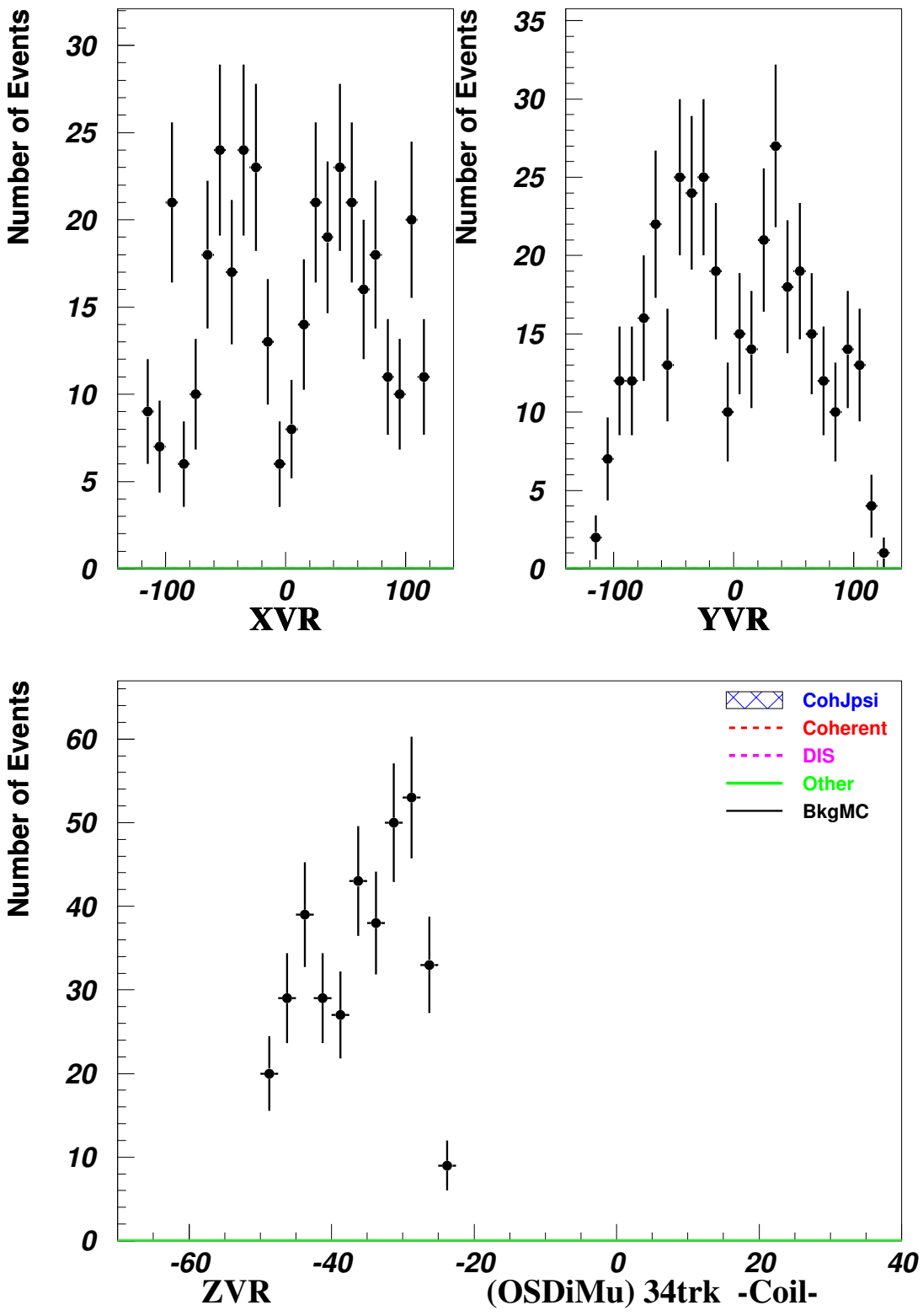


Figure 7: **(./figs/vertex.pdf)**

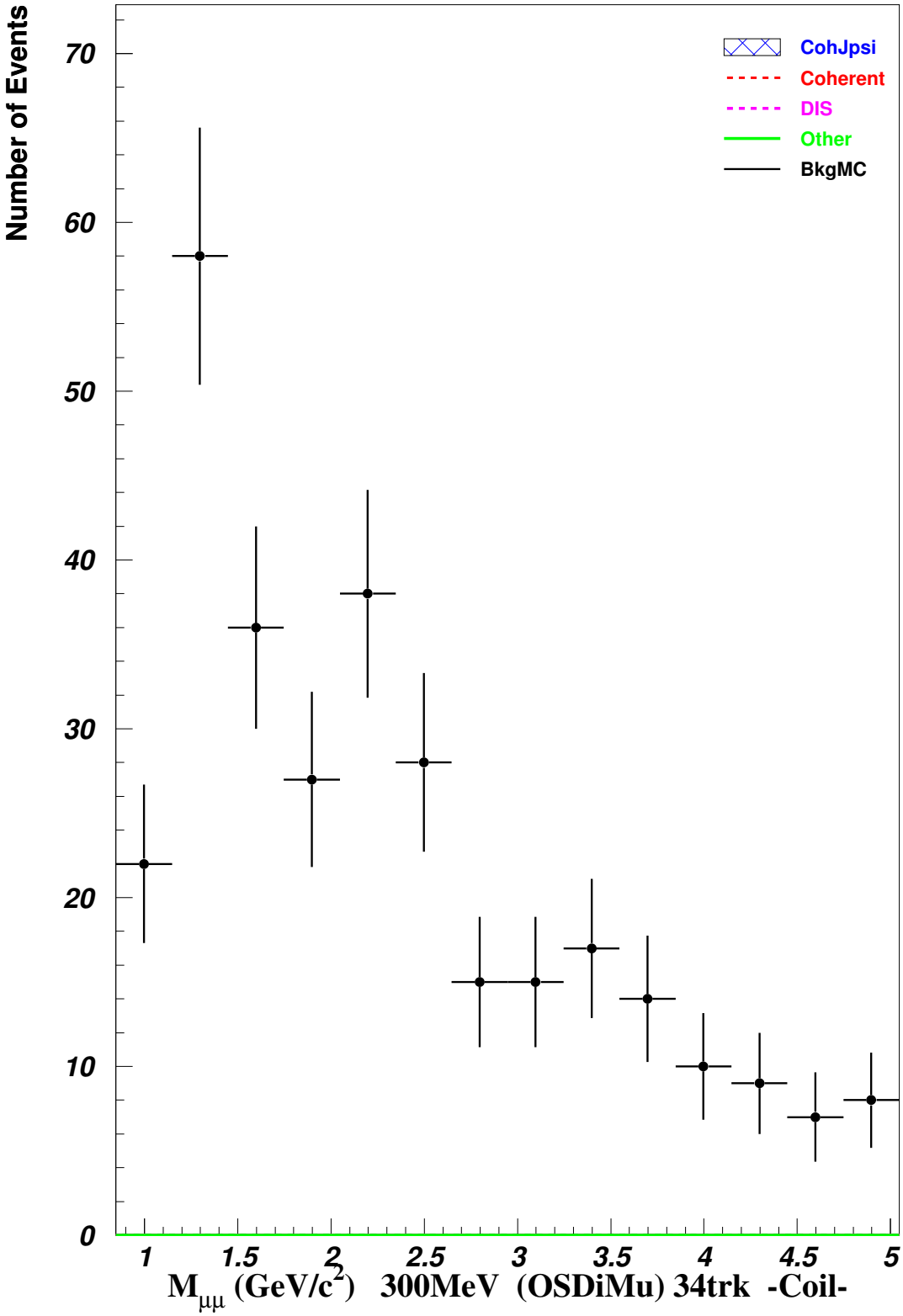


Figure 8: **(./figs/mass-0.9to5-300mev.pdf)**

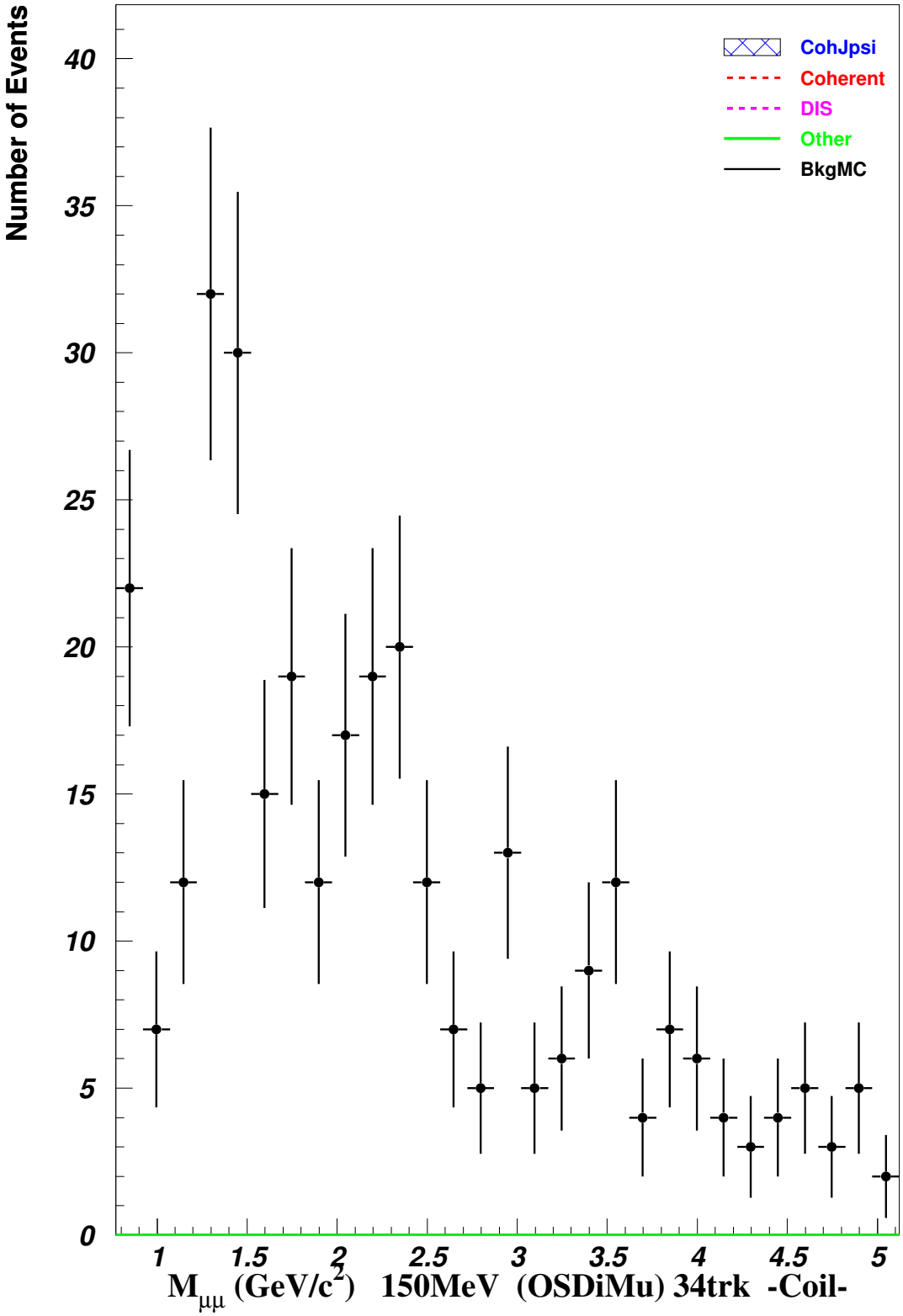


Figure 9: **(./figs/mass-0.9to5-150mev.pdf)**

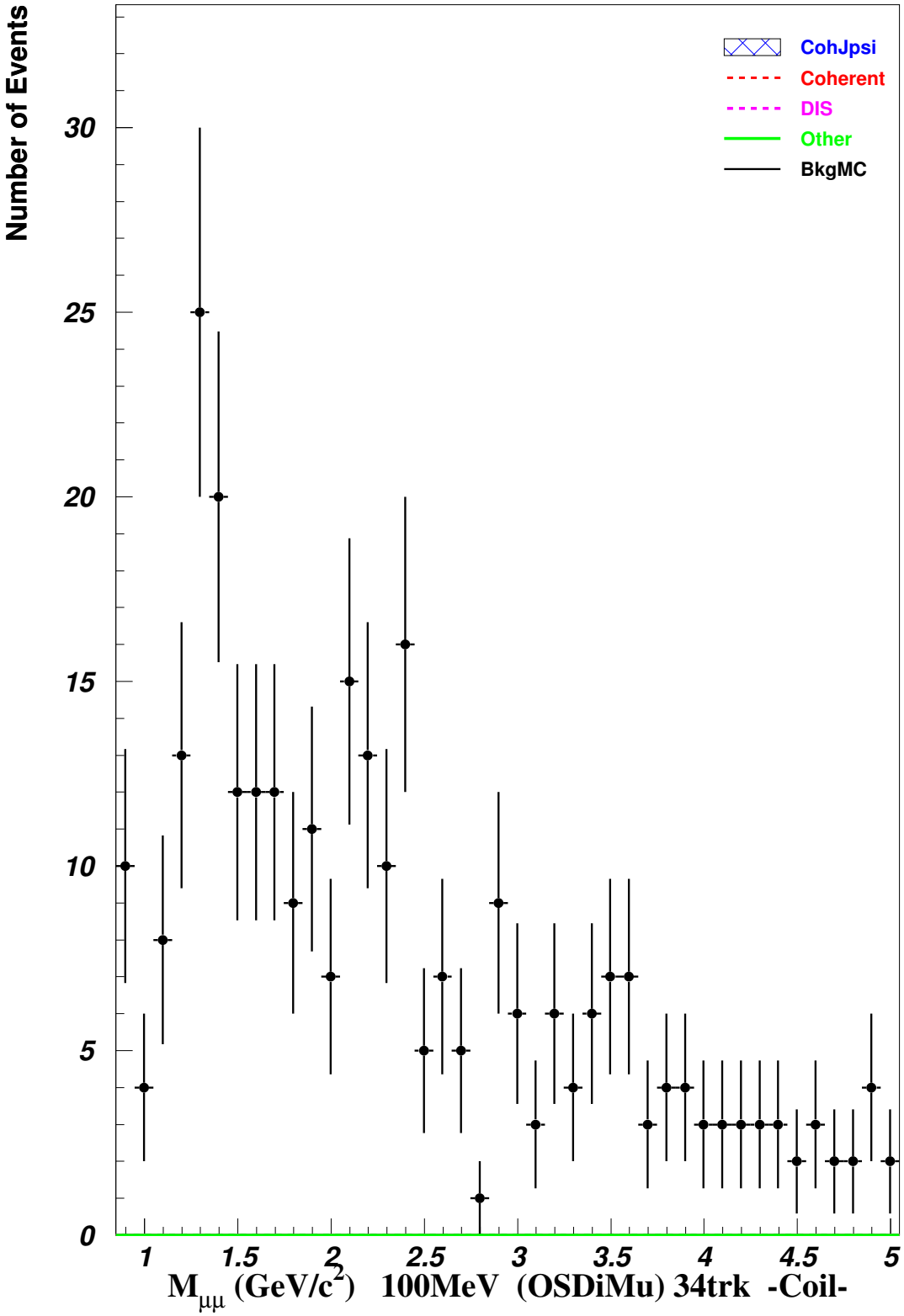


Figure 10: **(./figs/mass-0.9to5-100mev.pdf)**

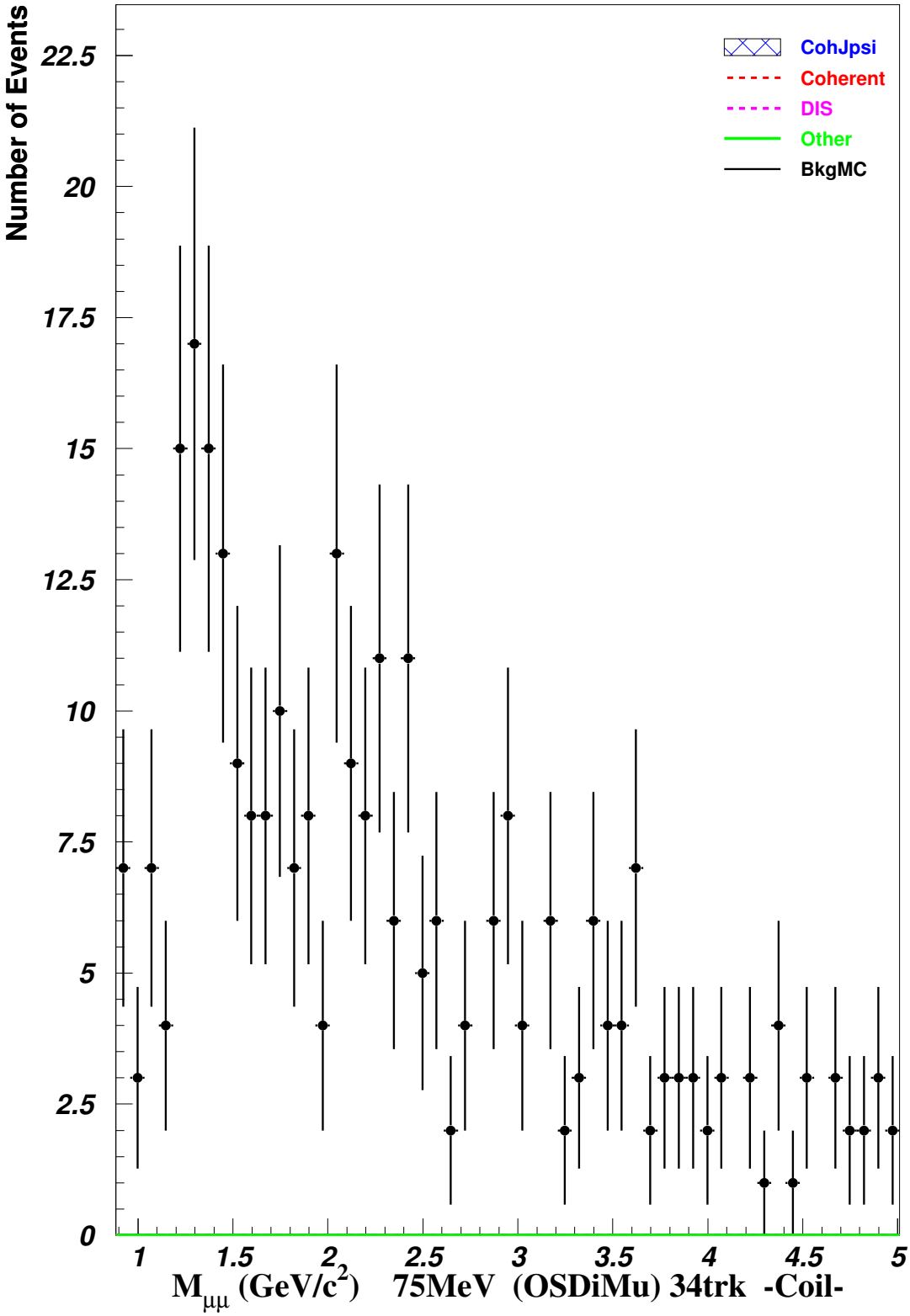


Figure 11: **(./figs/mass-0.9to5-75mev.pdf)**

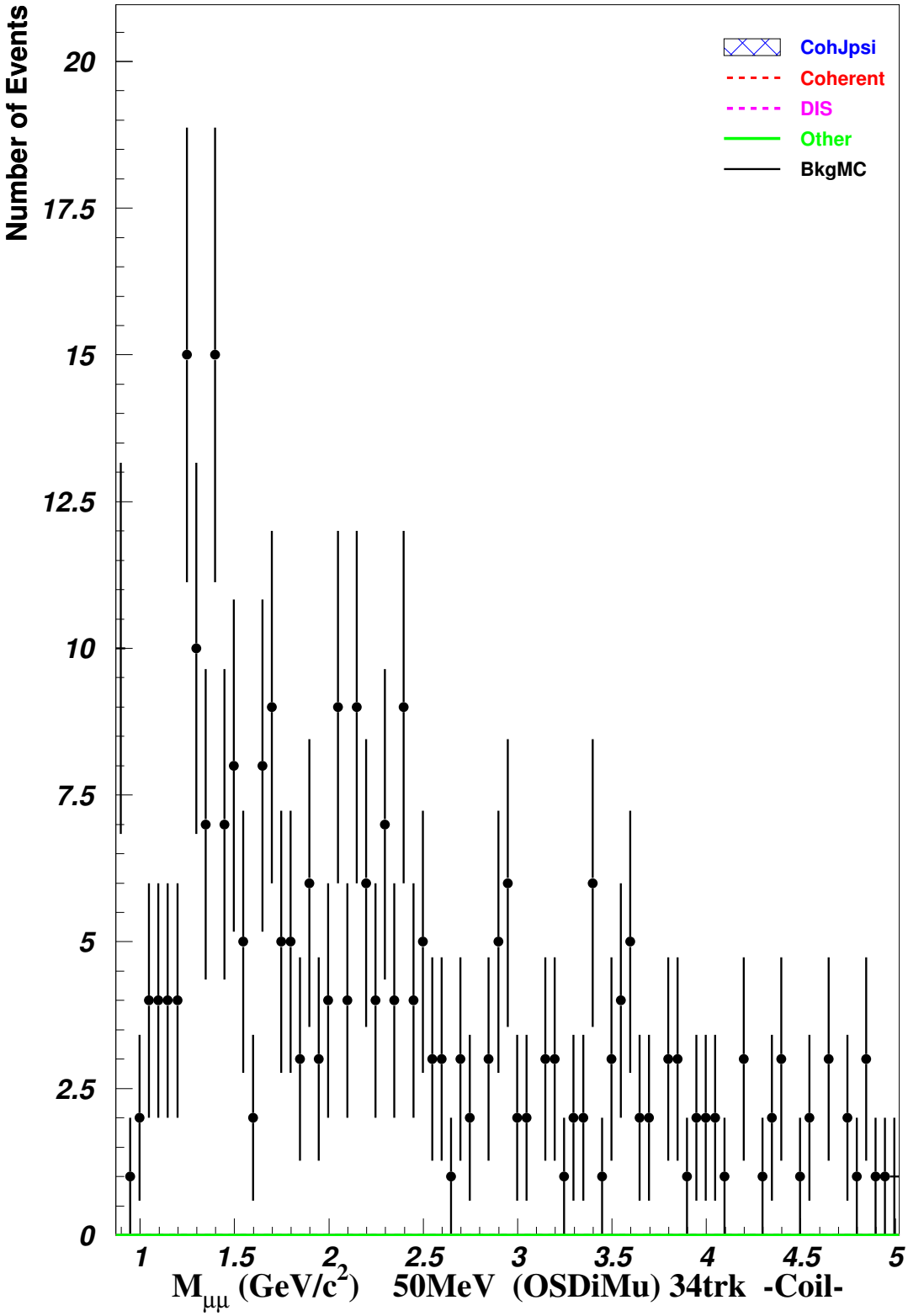


Figure 12: **(./figs/mass-0.9to5-50mev.pdf)**

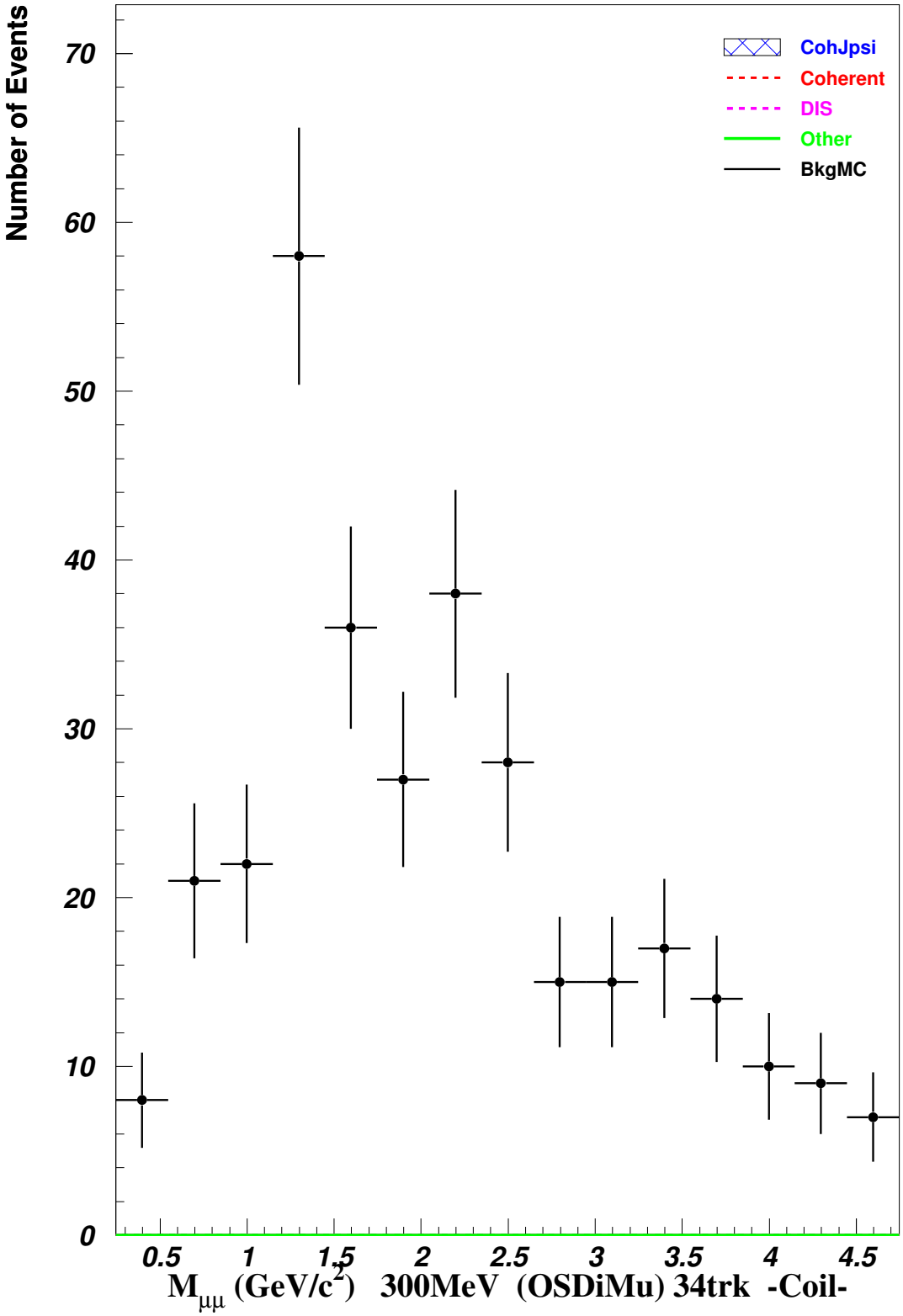


Figure 13: **(./figs/mass-0to5-300mev.pdf)**

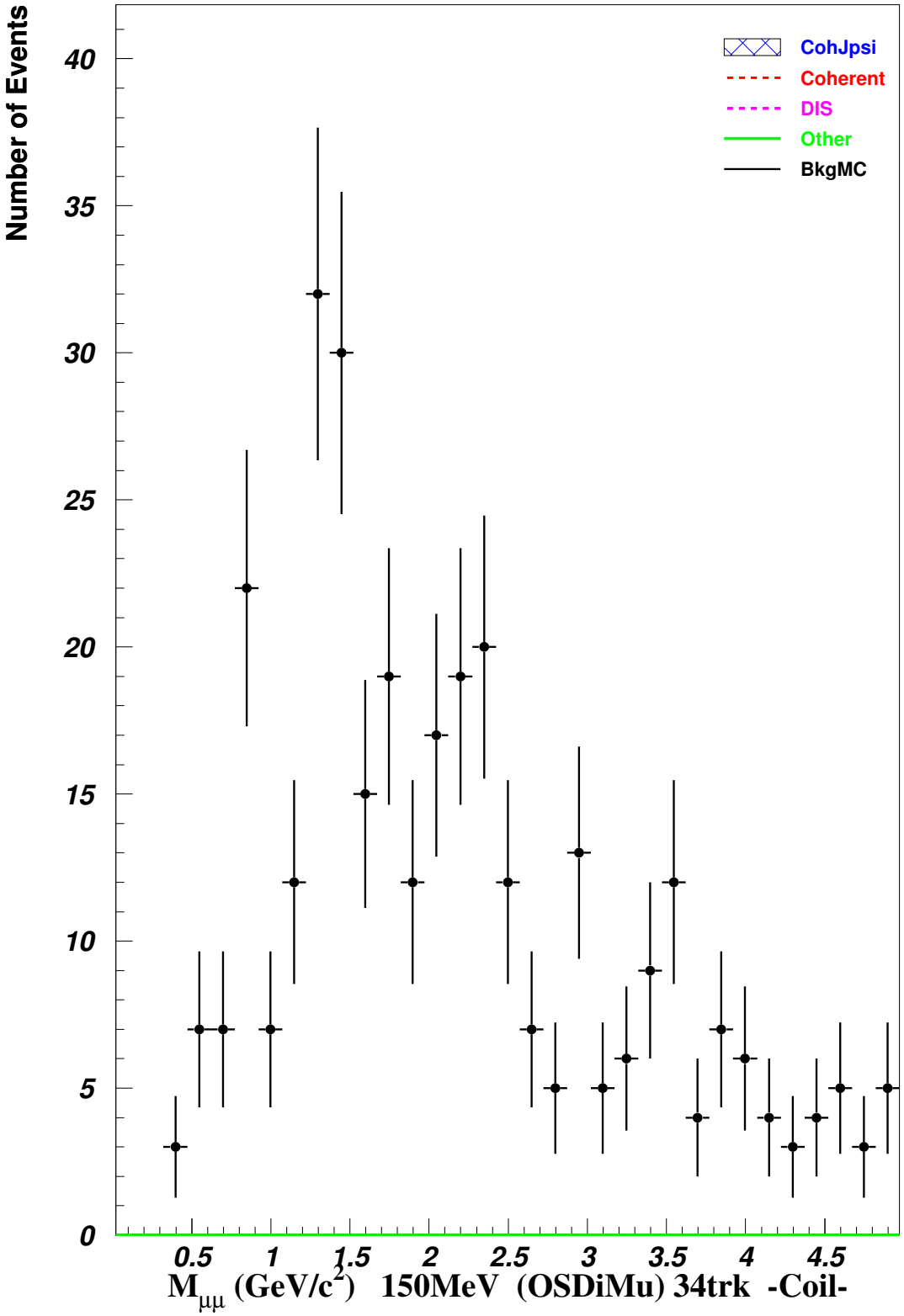


Figure 14: **(./figs/mass-0to5-150mev.pdf)**

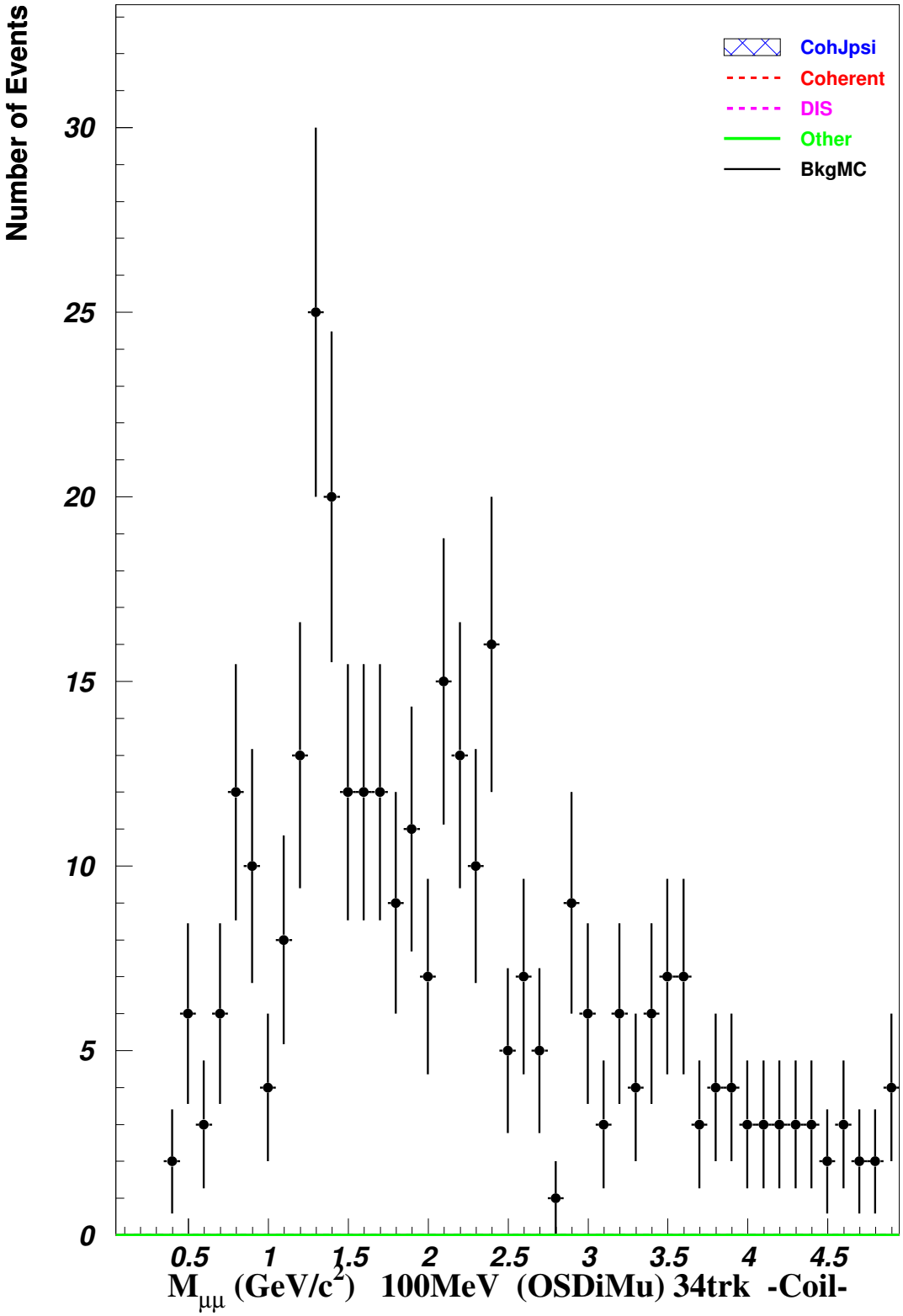


Figure 15: **(./figs/mass-0to5-100mev.pdf)**

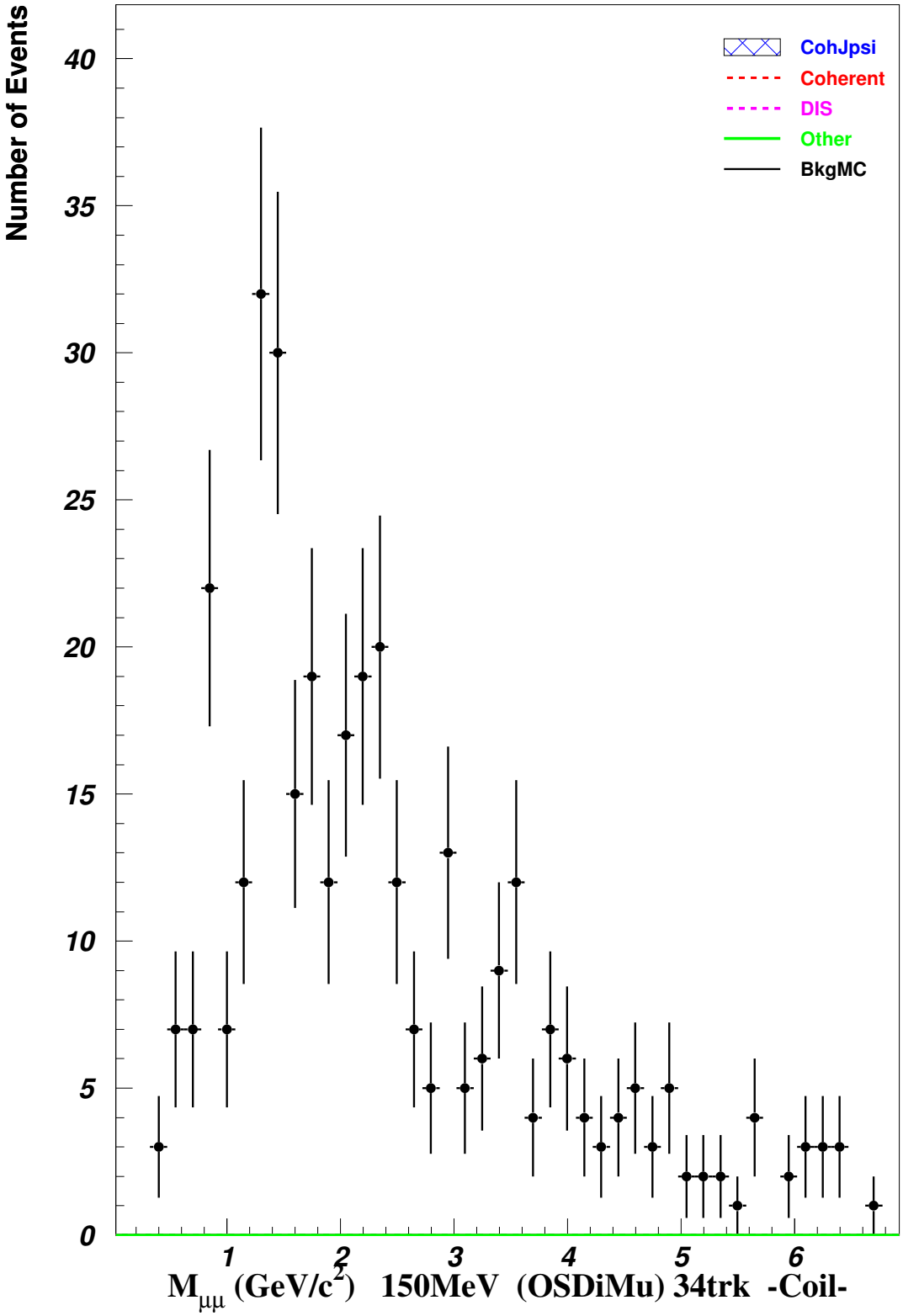


Figure 16: **(./figs/mass-0to7-150mev.pdf)**

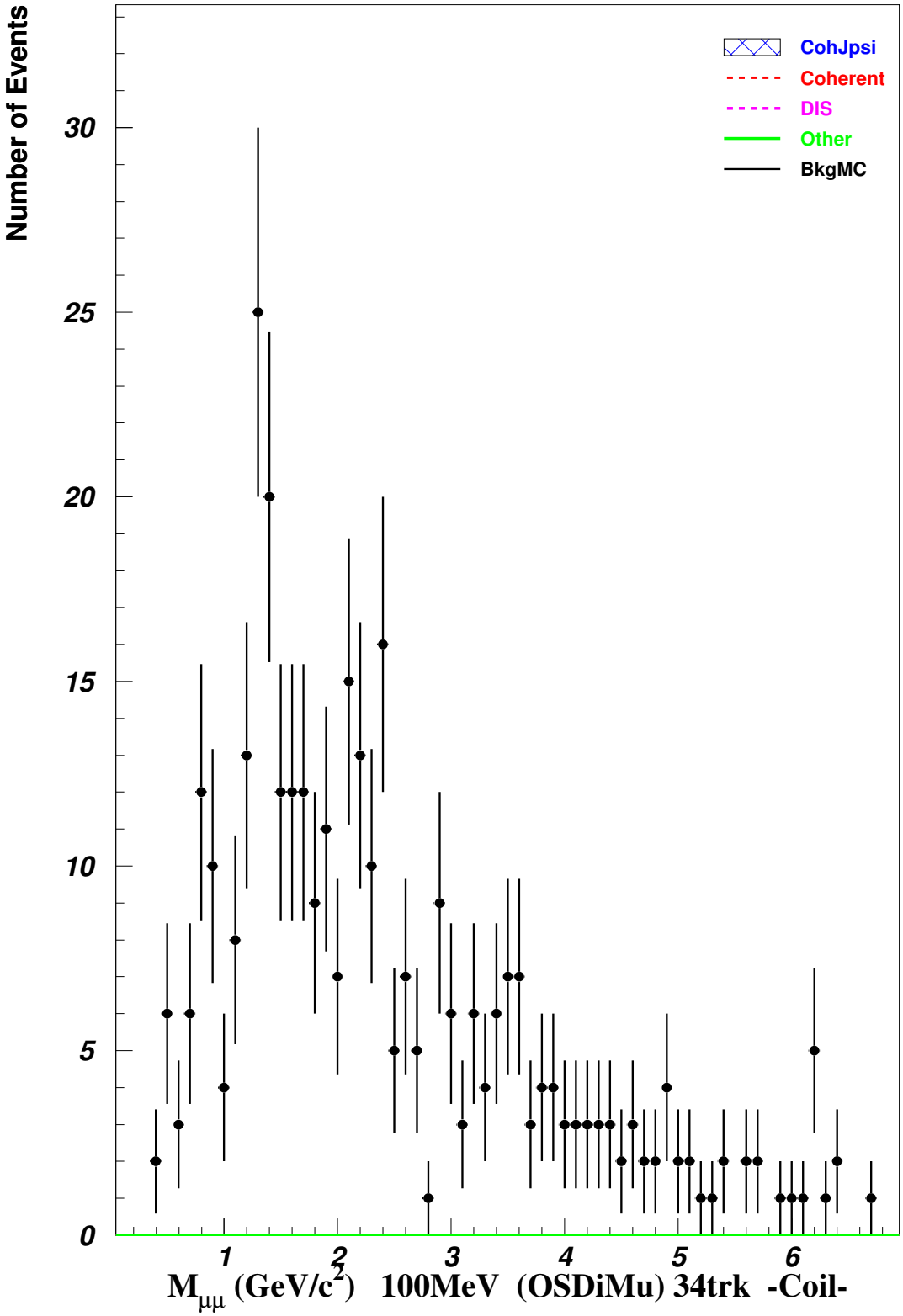


Figure 17: **(./figs/mass-0to7-100mev.pdf)**

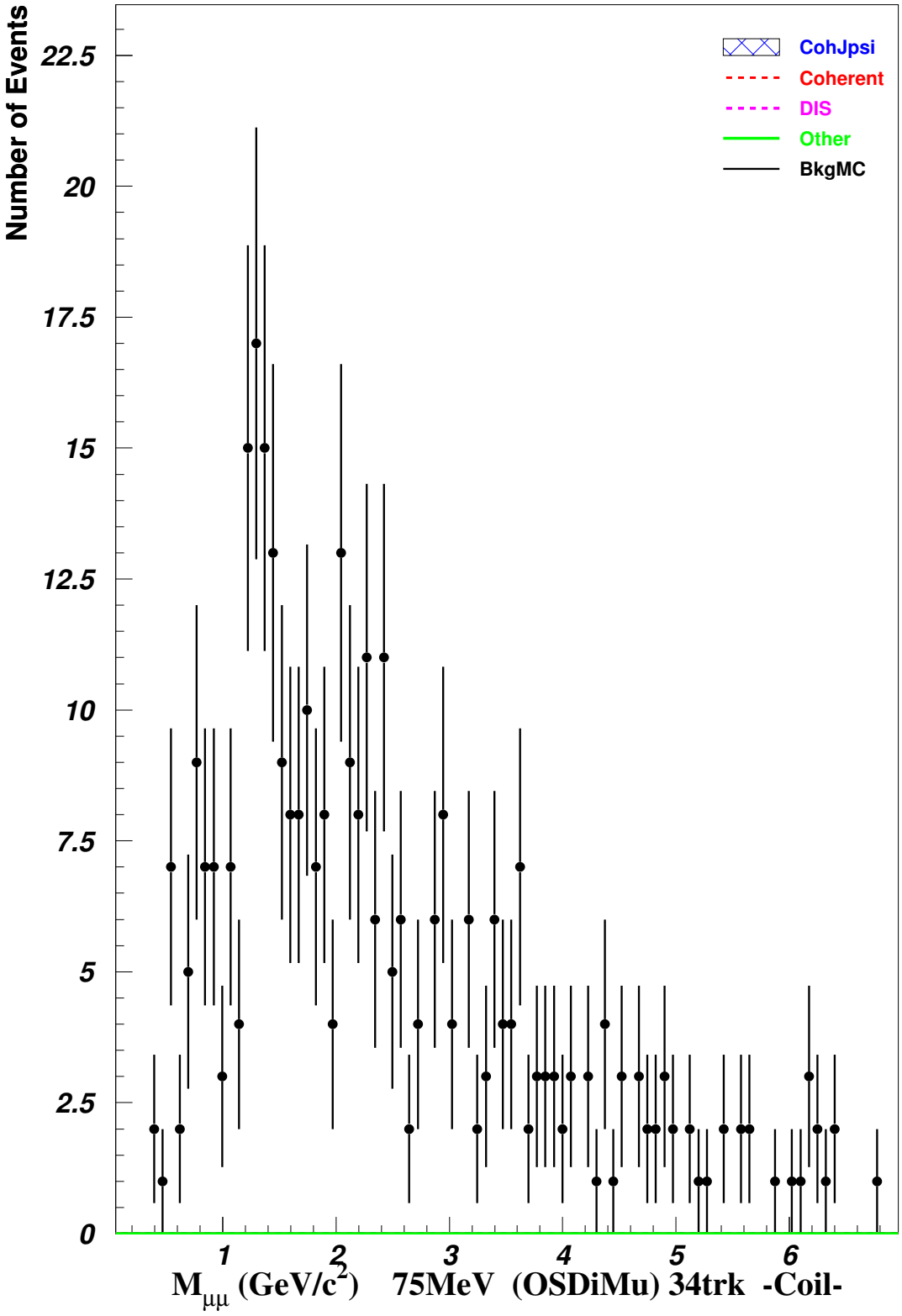


Figure 18: **(./figs/mass-0to7-75mev.pdf)**

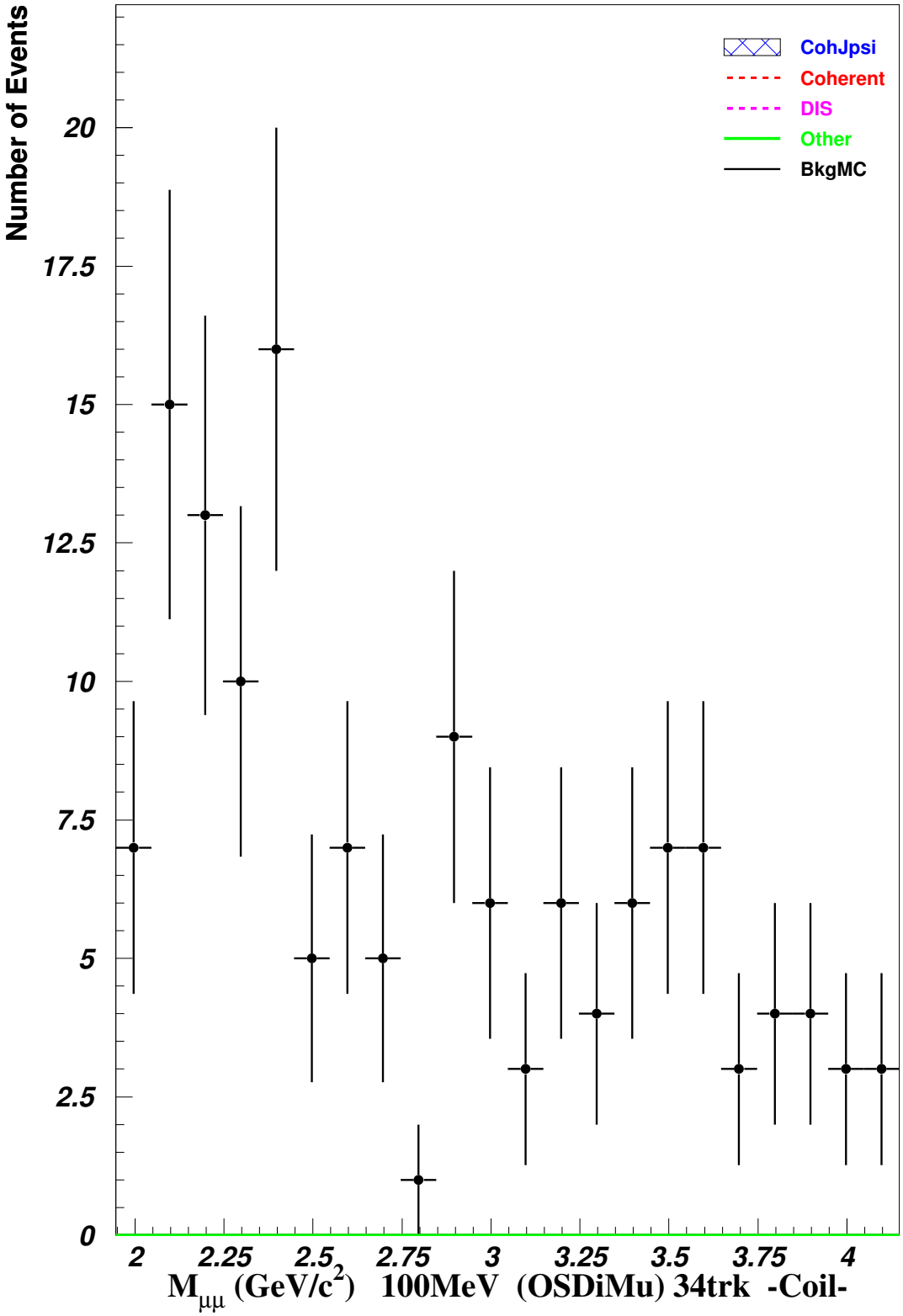


Figure 19: **(./figs/mass-2to4-100mev.pdf)**

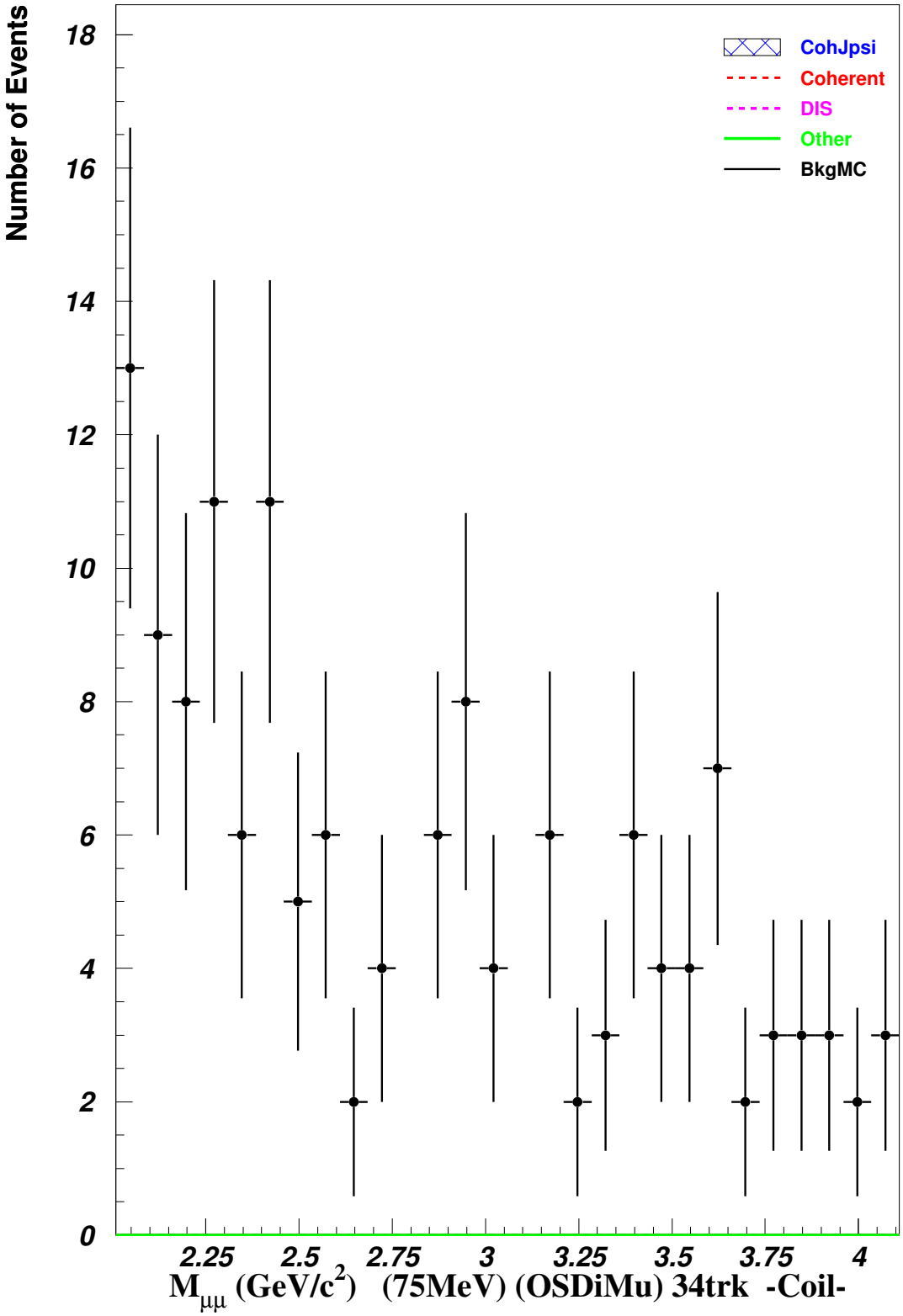


Figure 20: **(./figs/mass-2to4-75mev.pdf)**

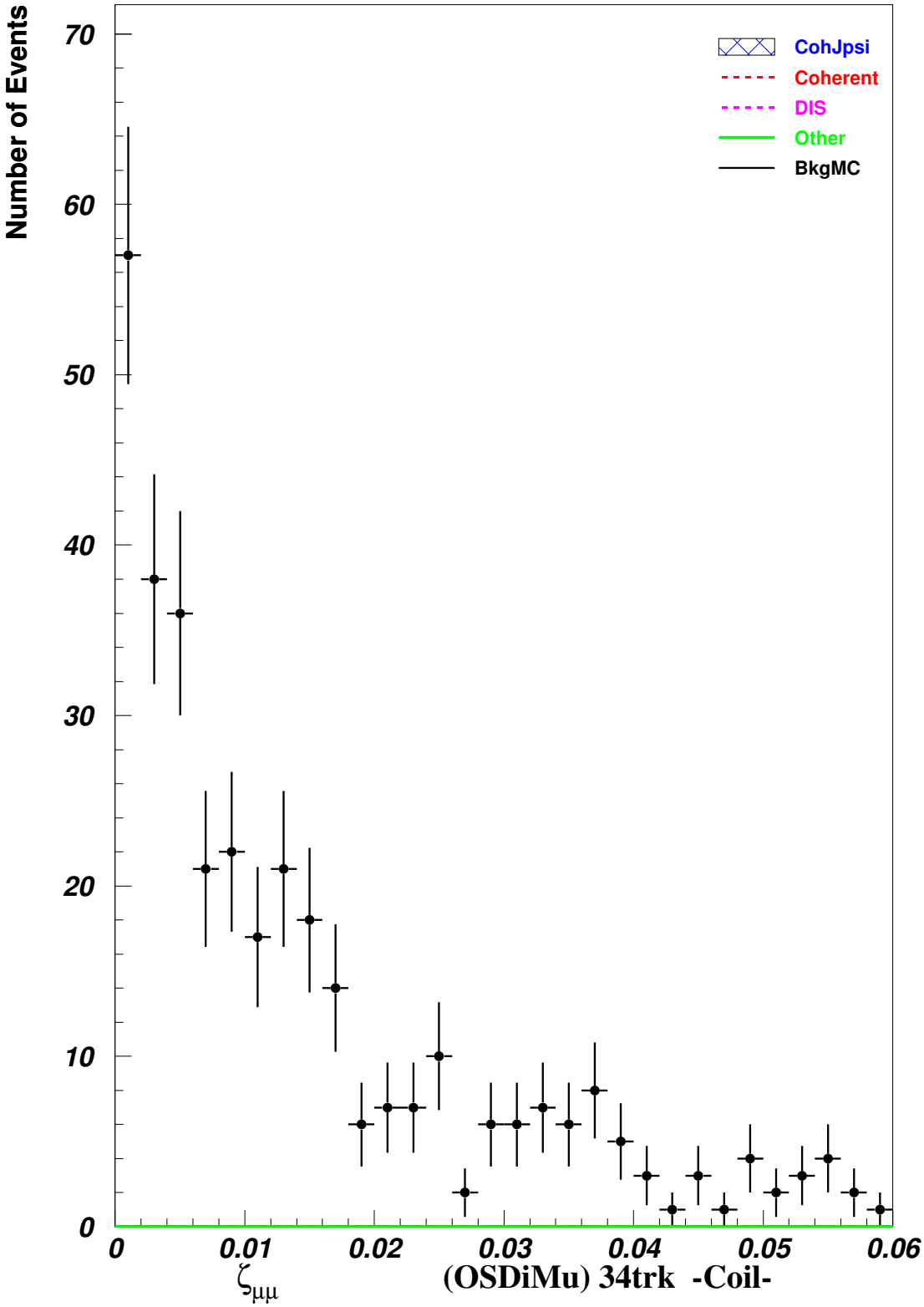


Figure 21: **(./figs/zetamumu.pdf)**

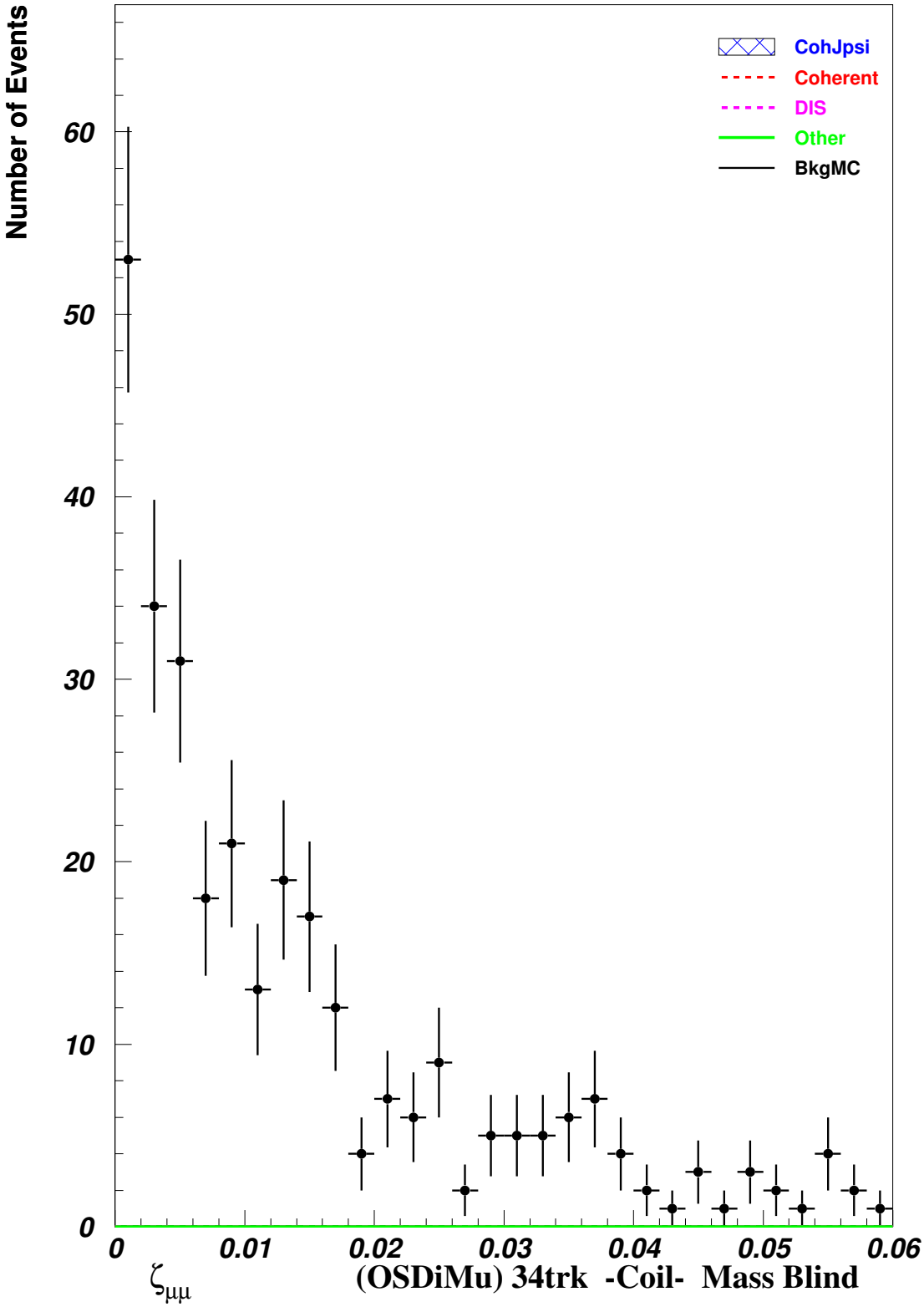


Figure 22: **(./figs/zetamumu-mb.pdf)**

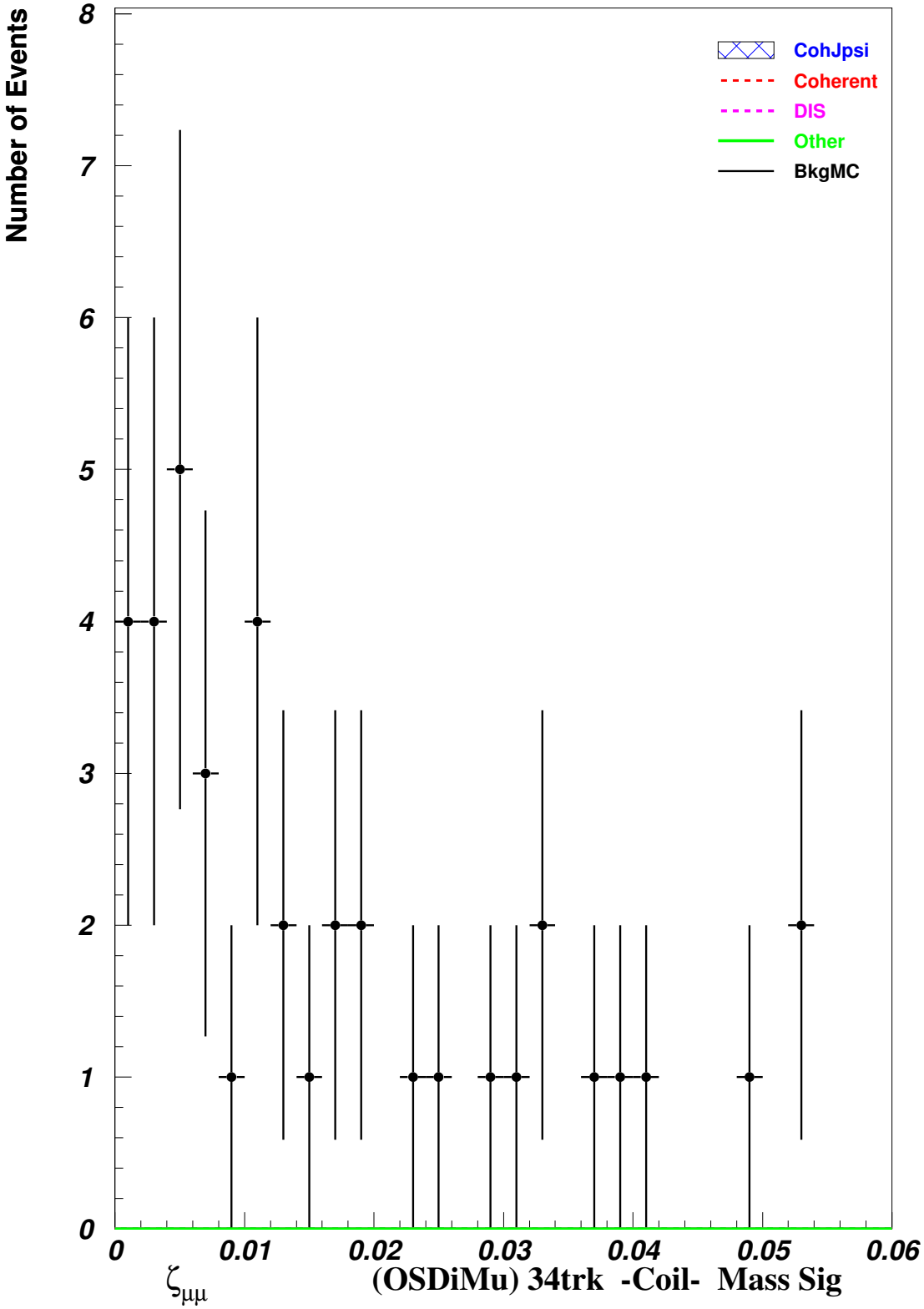


Figure 23: **(./figs/zetamumu-msig.pdf)**

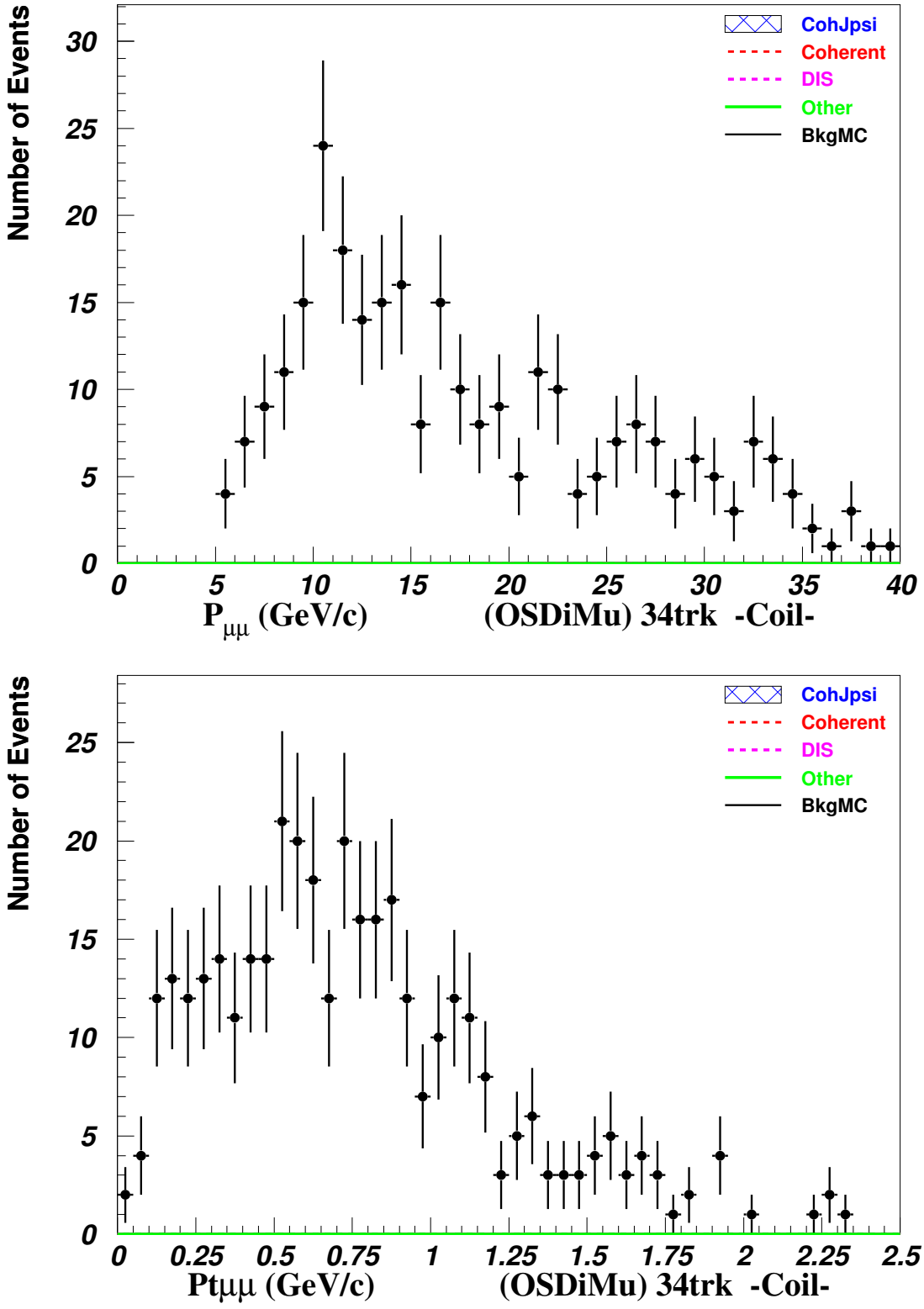


Figure 24: **(./figs/p-pt-mumu.pdf)**

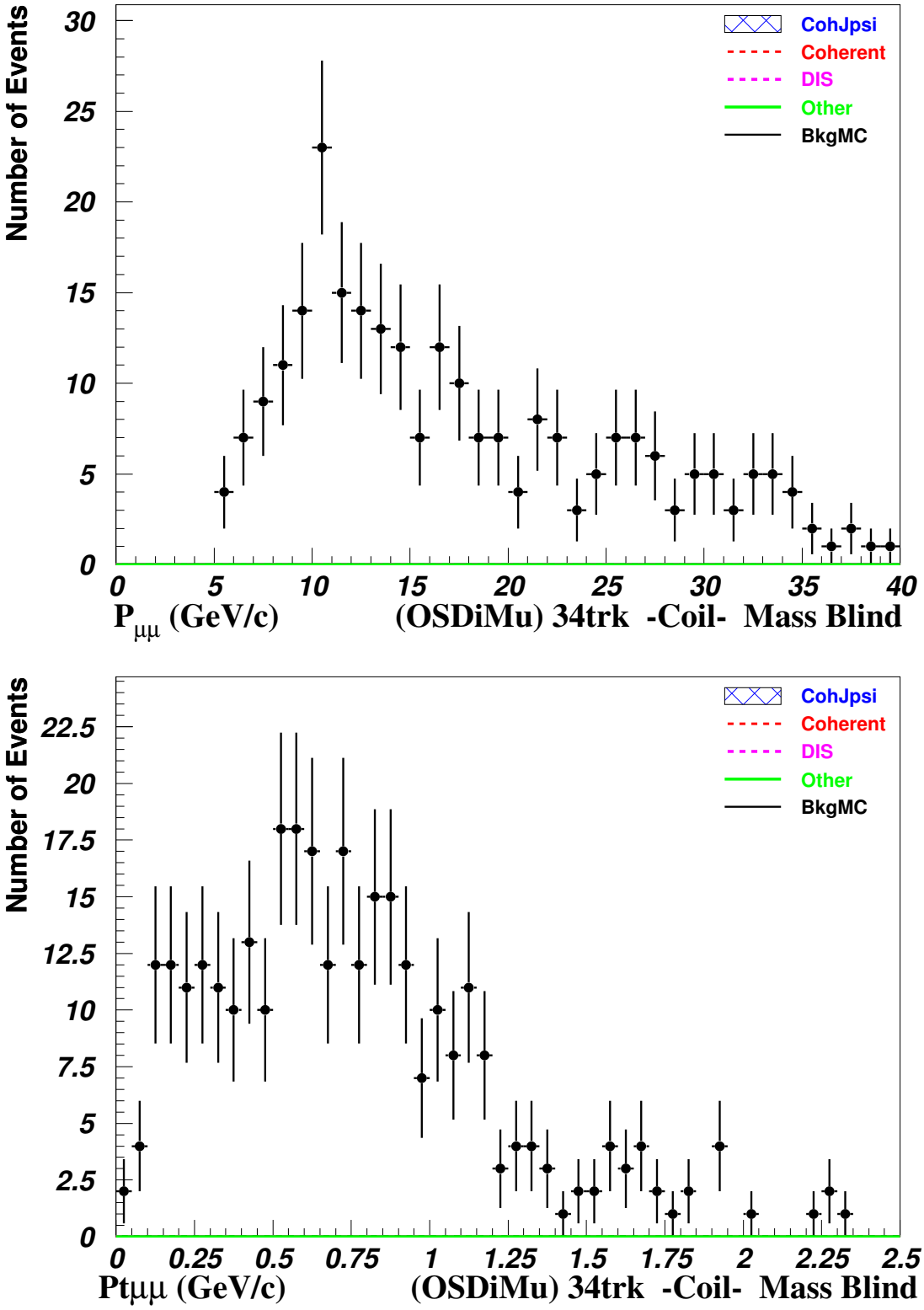


Figure 25: (./figs/p-pt-mumu-mb.pdf)

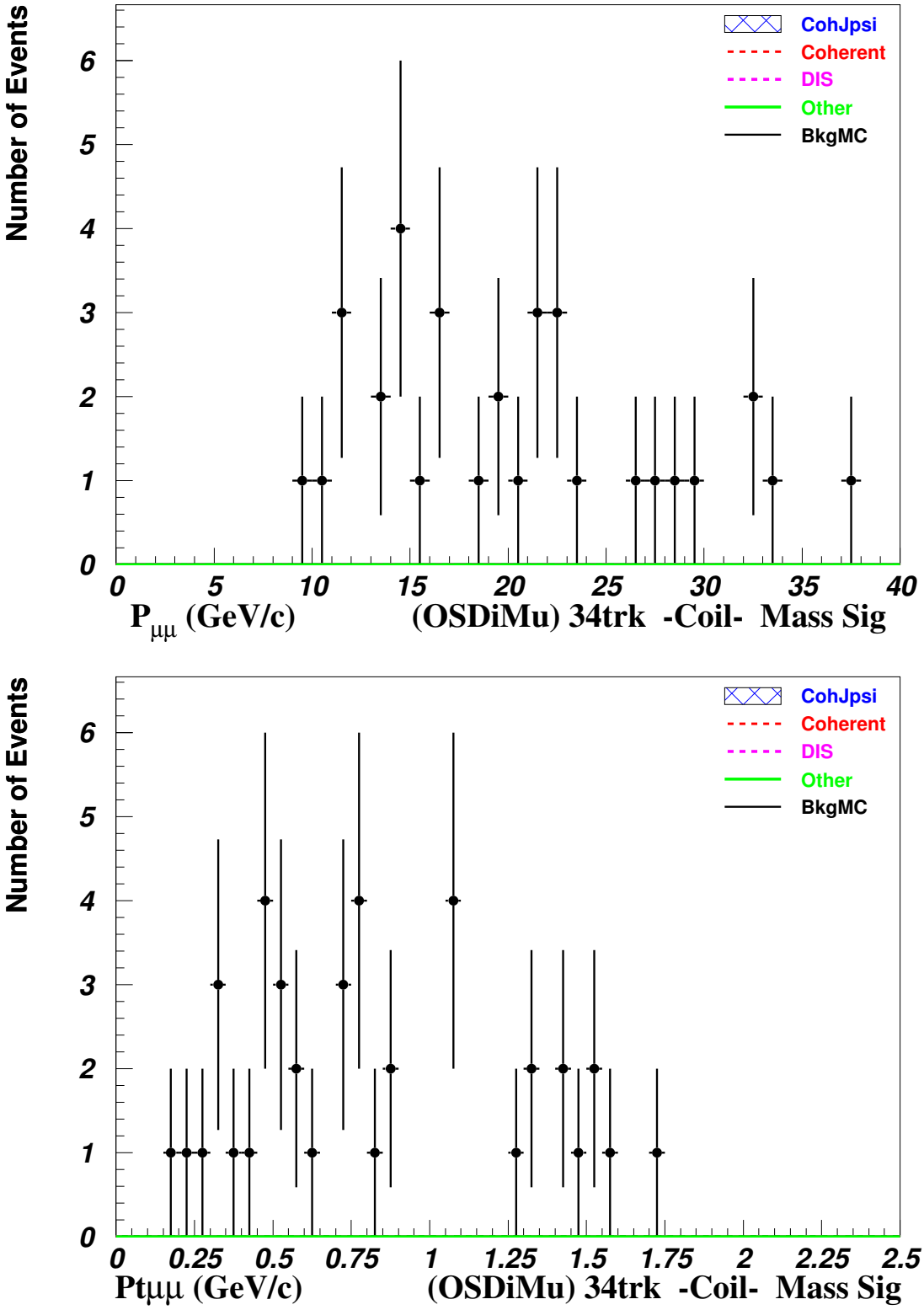


Figure 26: **(./figs/p-pt-mumu-msig.pdf)**

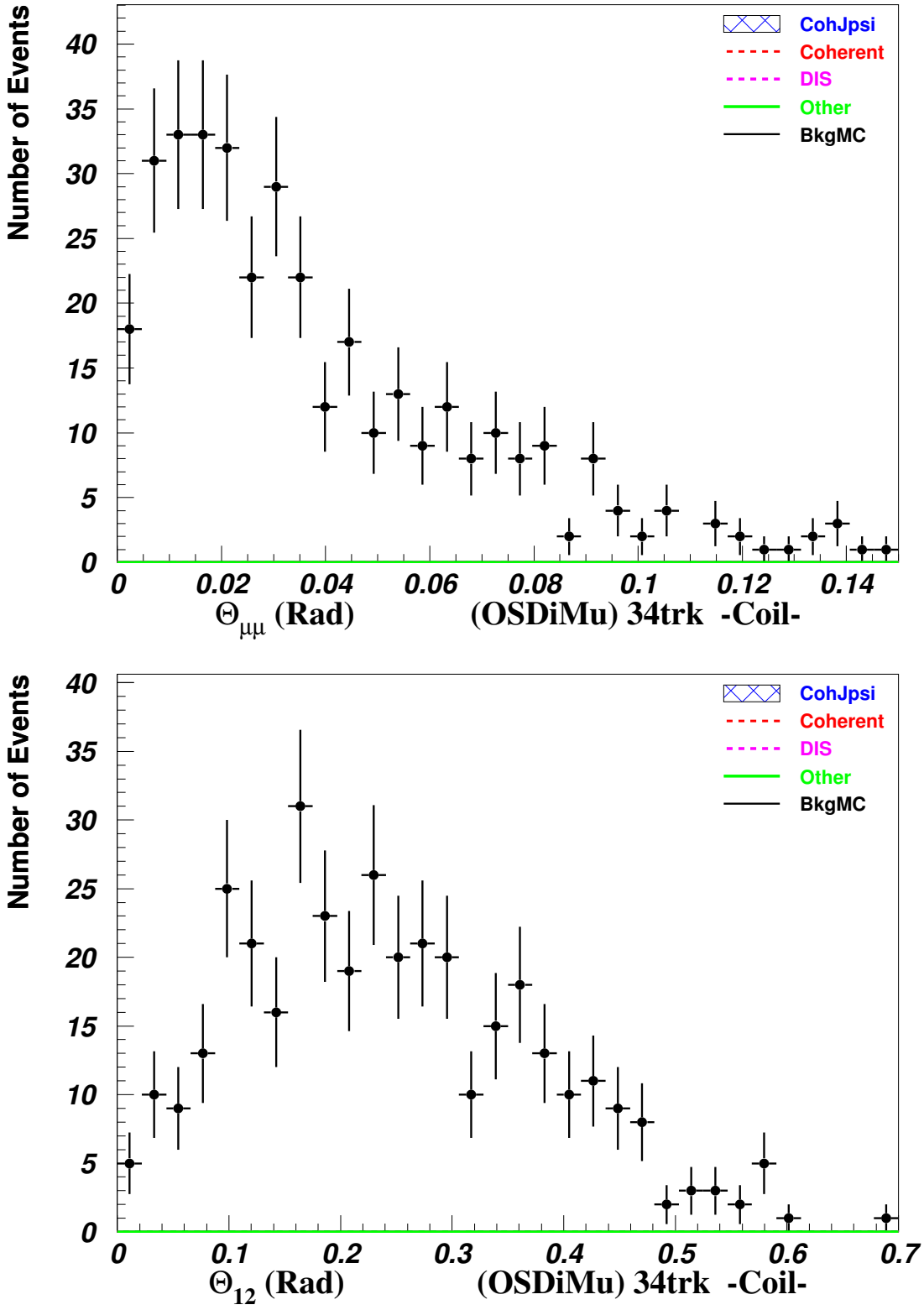


Figure 27: **(./figs/thetamumu-theta12.pdf)**

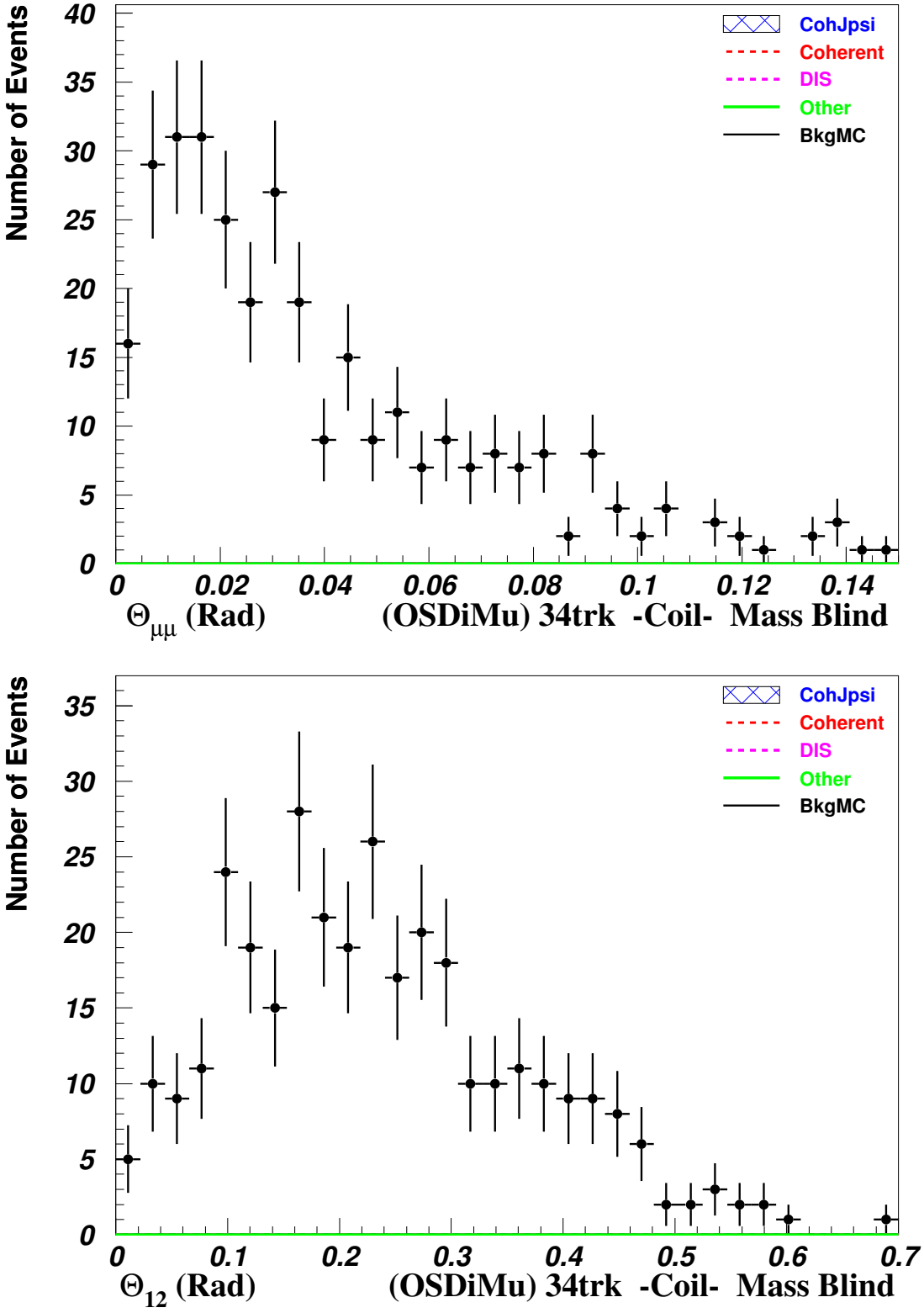


Figure 28: **(./figs/thetamumu-theta12-mb.pdf)**

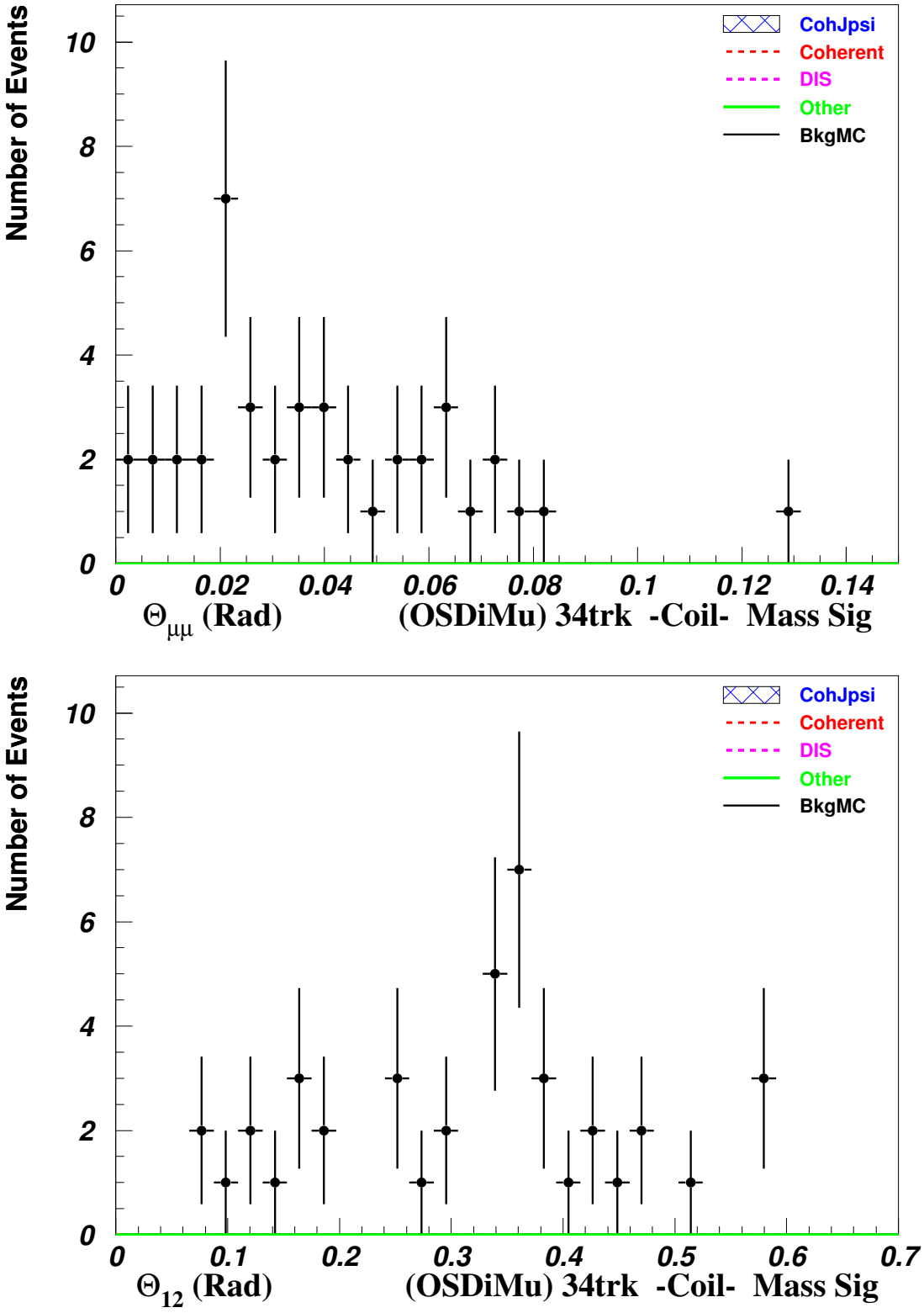


Figure 29: **(./figs/thetamumu-theta12-msig.pdf)**

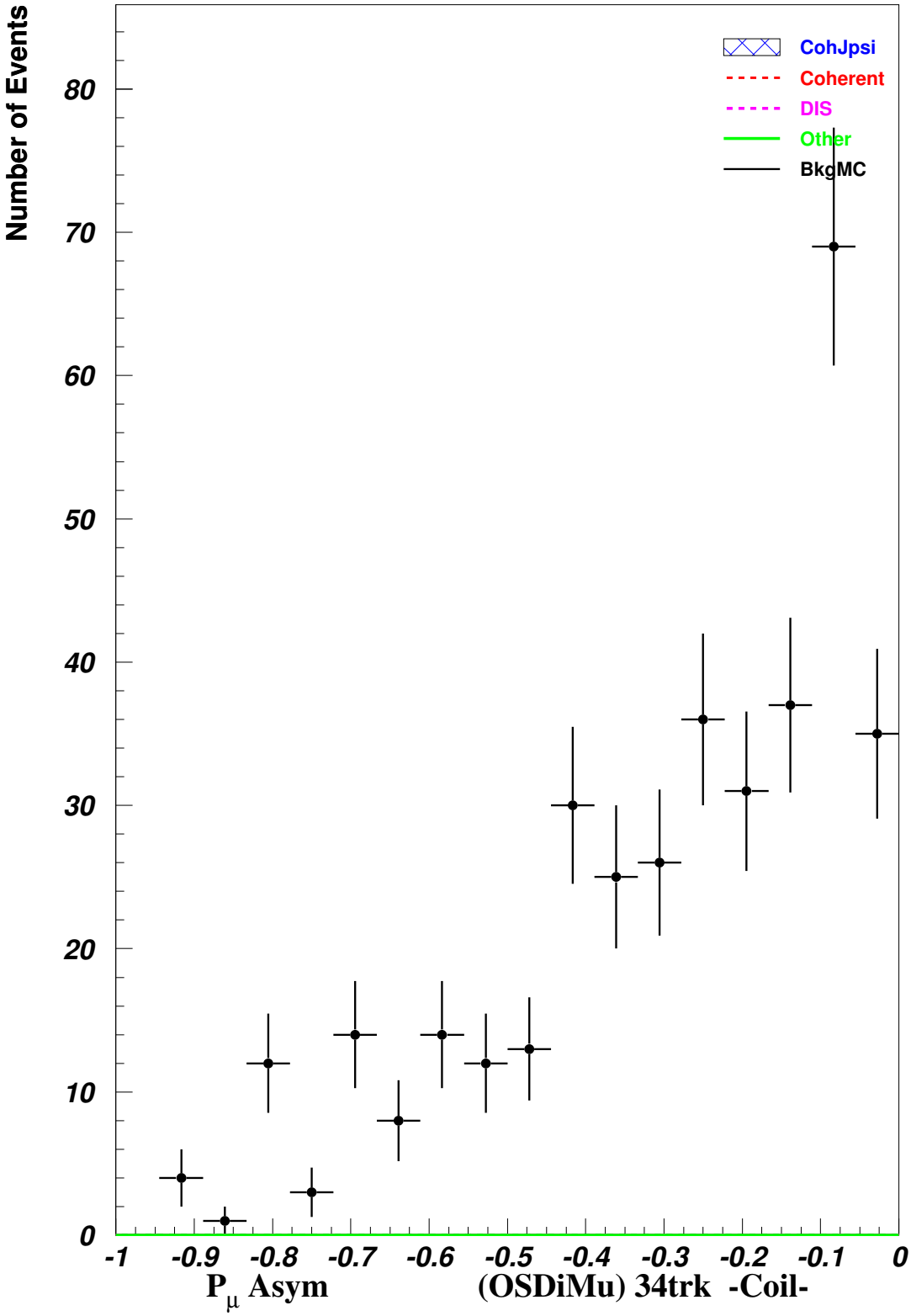


Figure 30: **(./figs/pasym.pdf)**

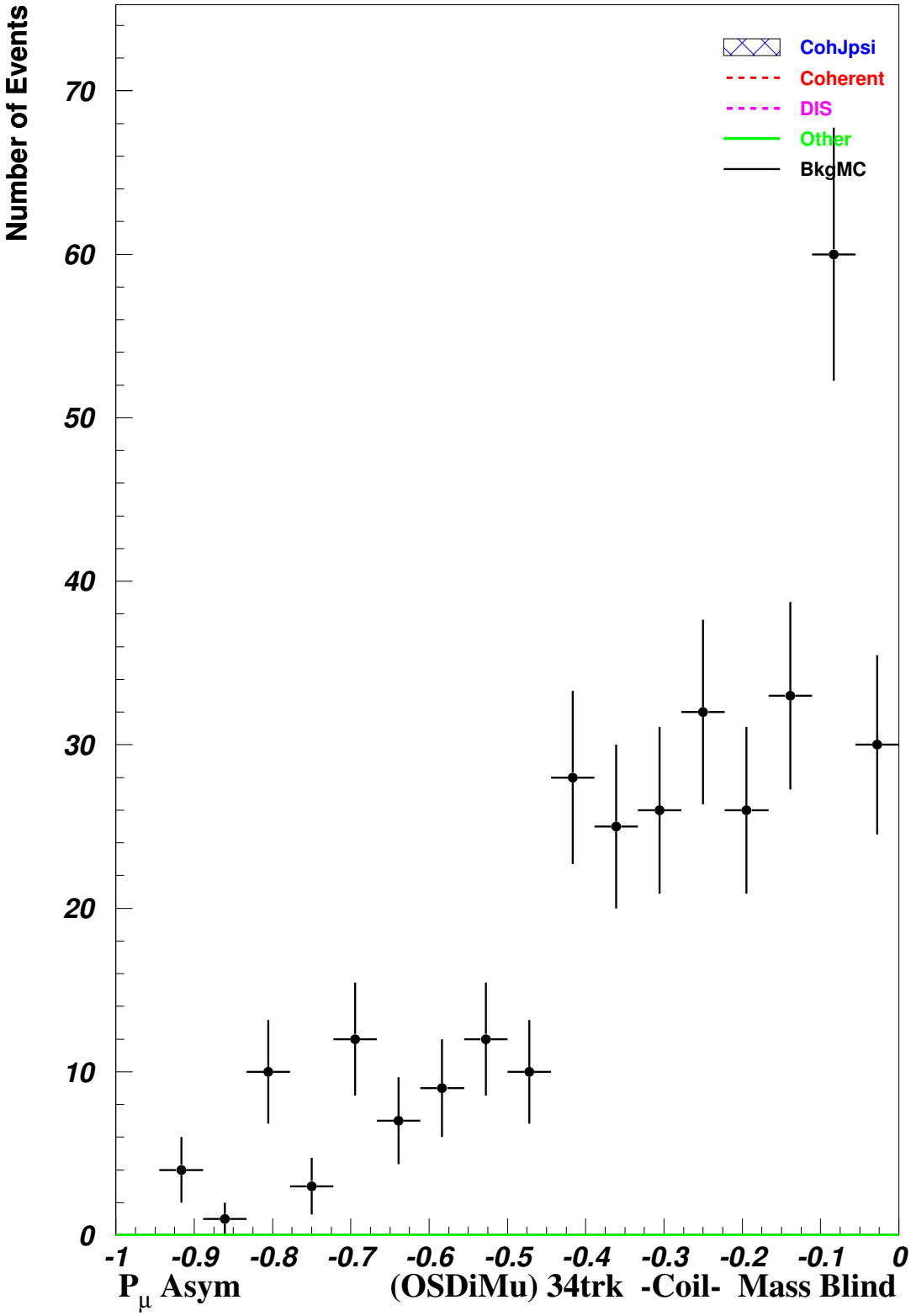


Figure 31: **(./figs/pasym-mb.pdf)**

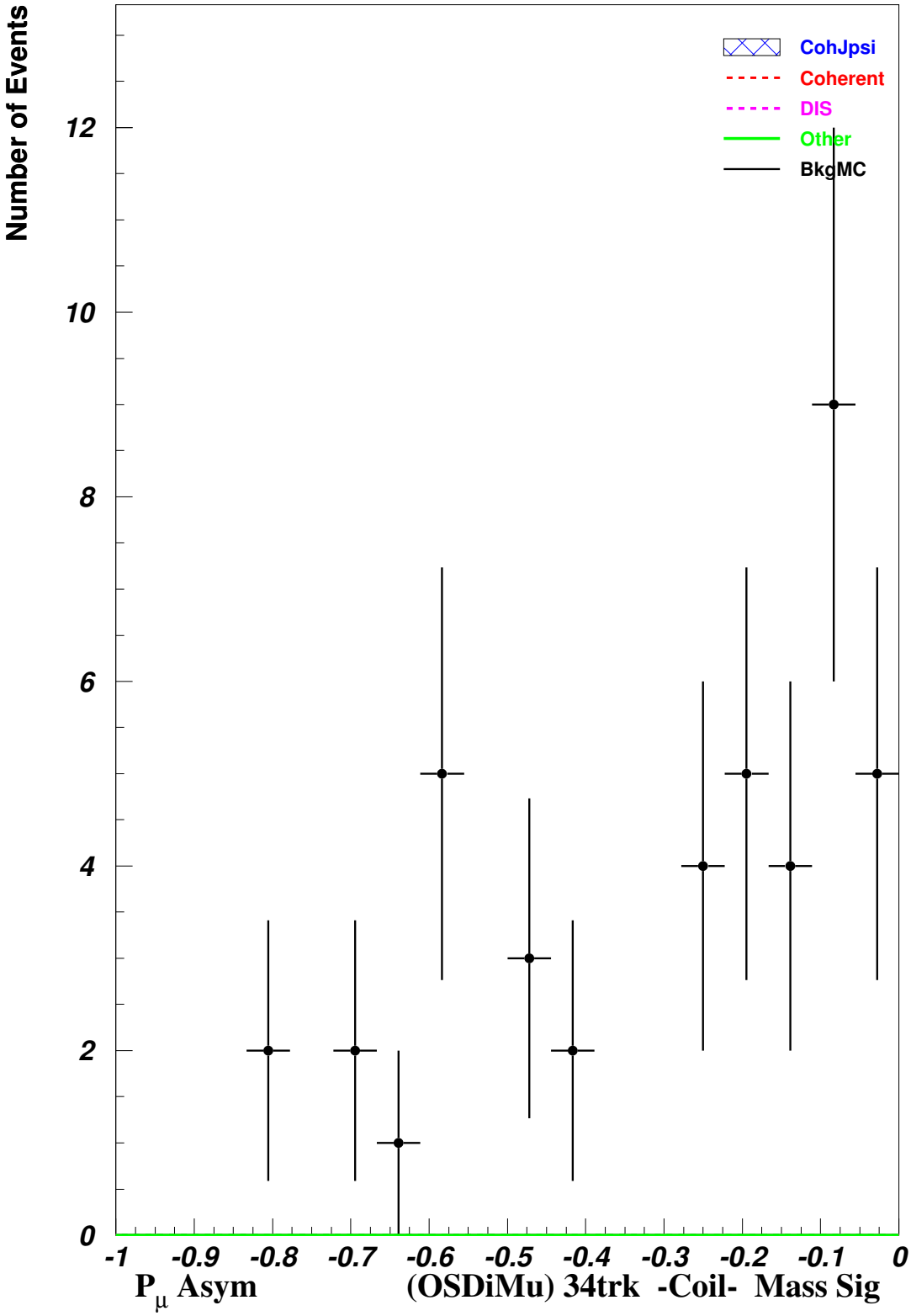


Figure 32: **(./figs/pasym-msig.pdf)**

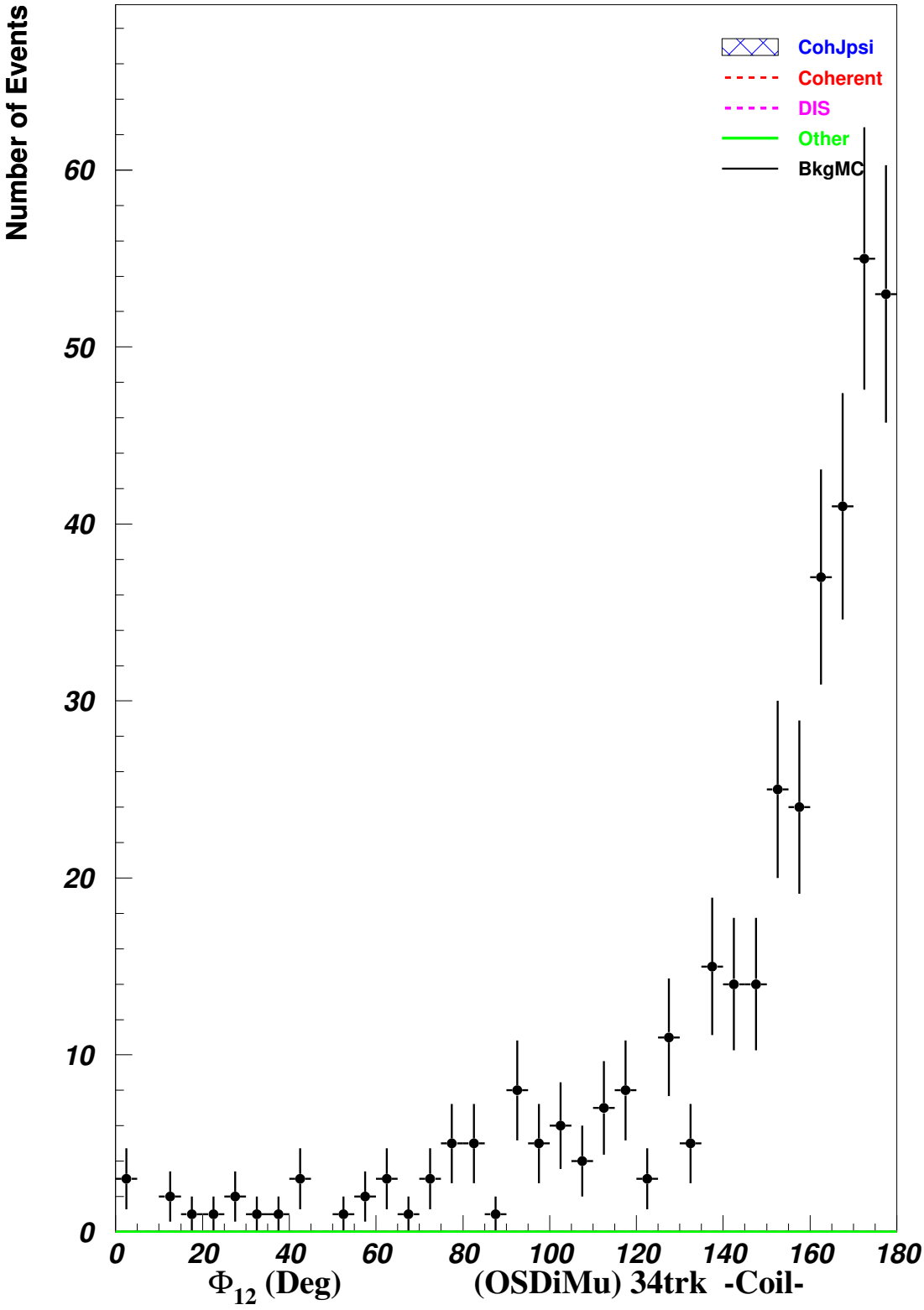


Figure 33: **(./figs/phi12.pdf)**

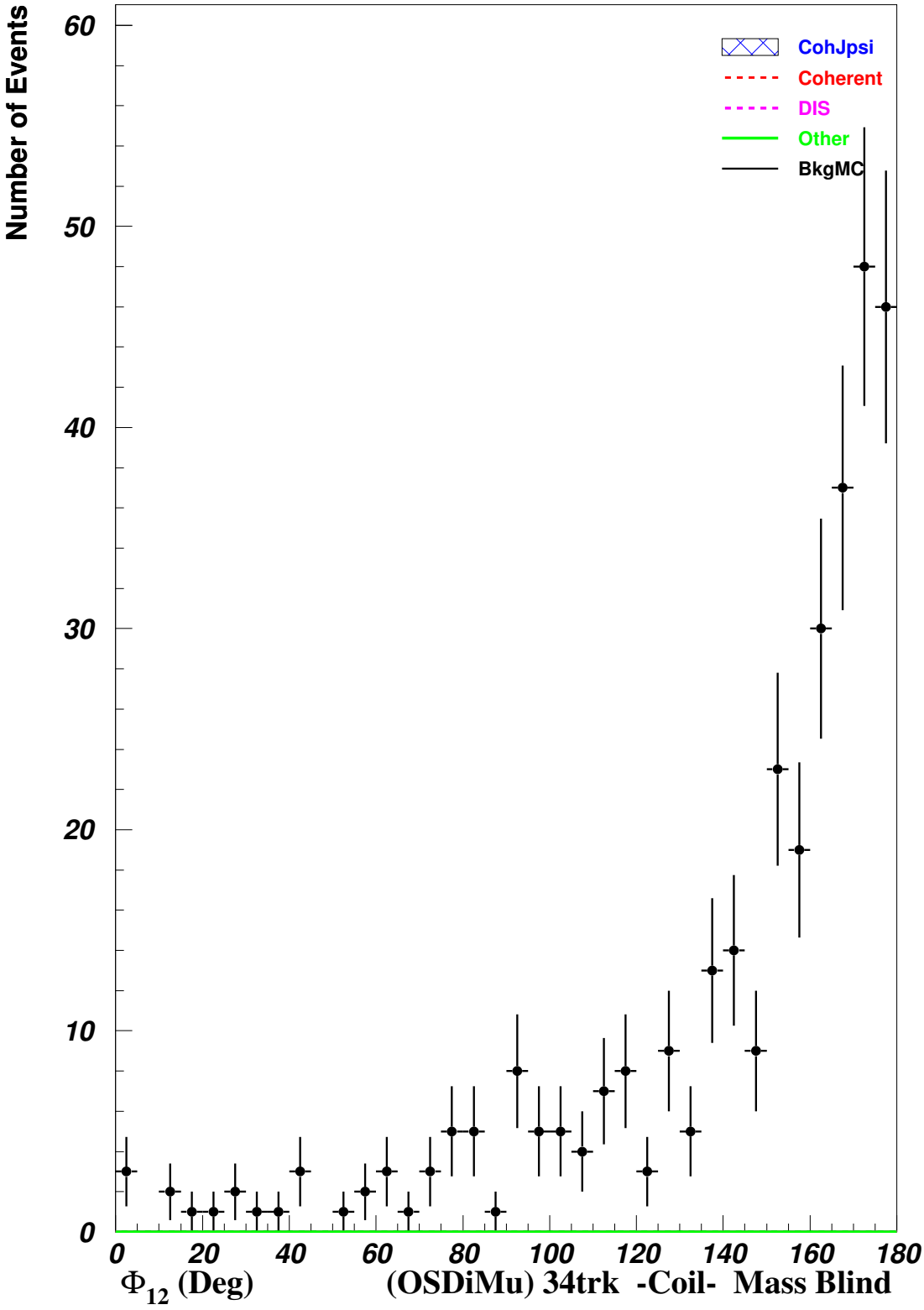


Figure 34: **(./figs/phi12-mb.pdf)**

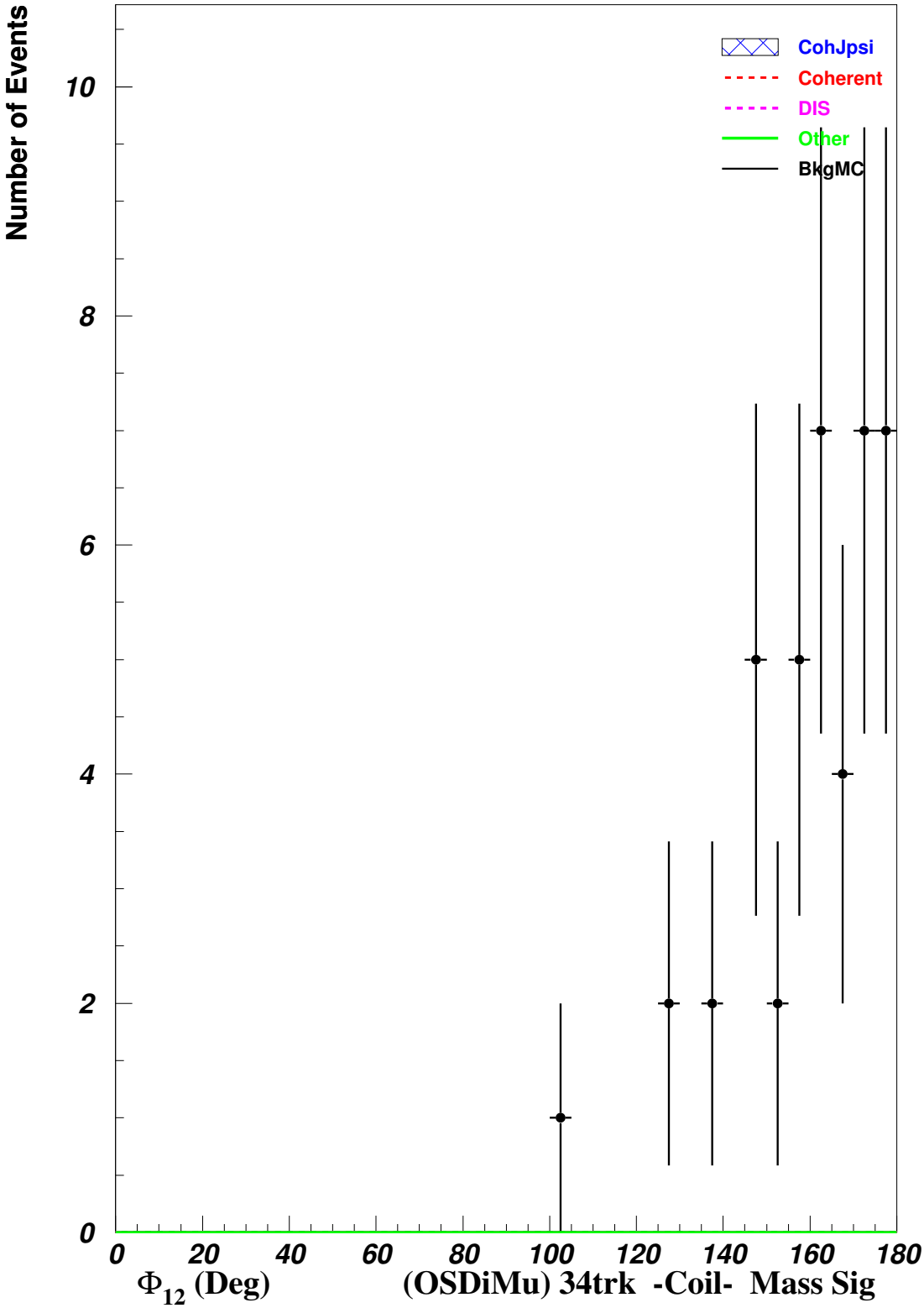


Figure 35: **(./figs/phi12-msig.pdf)**

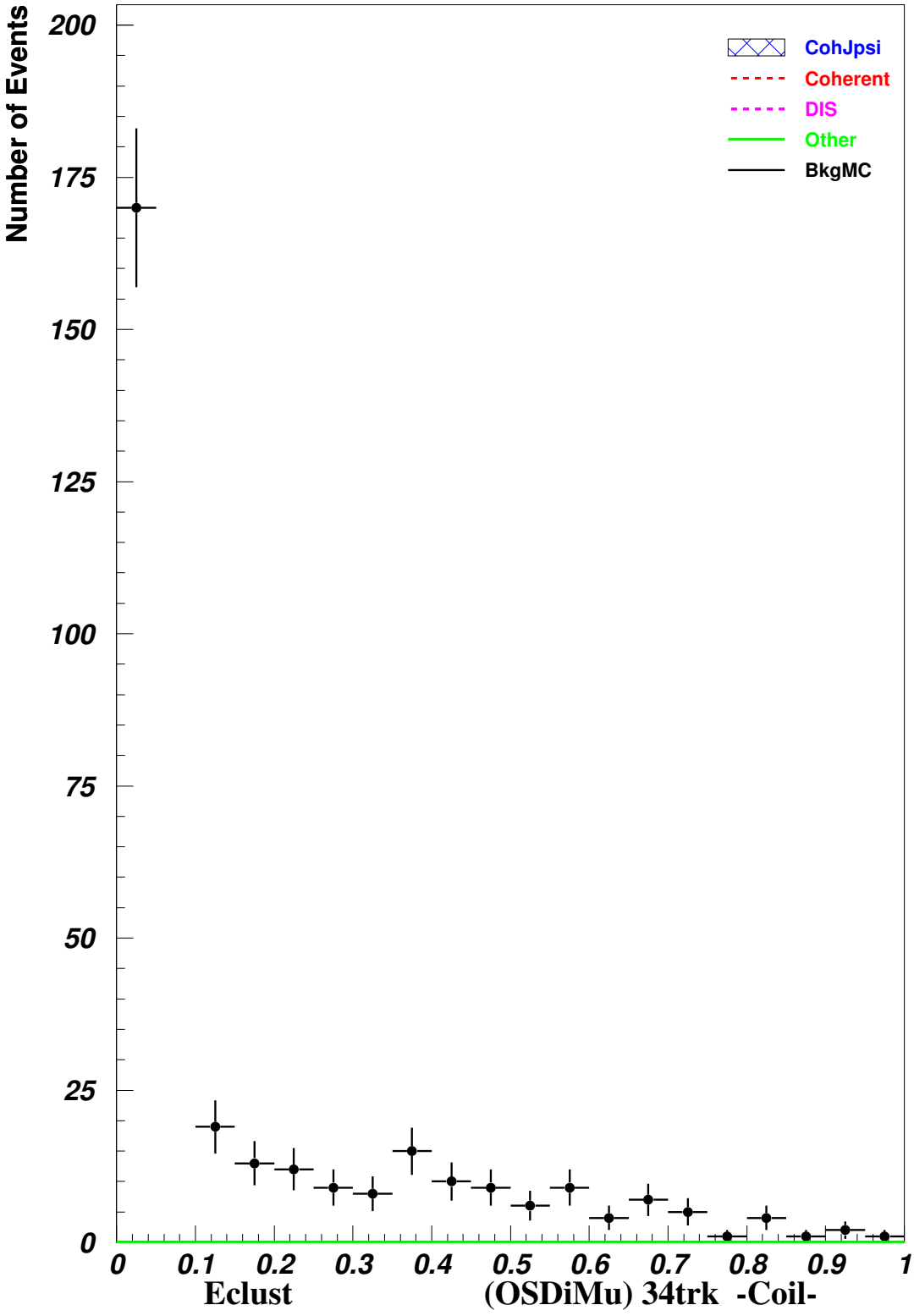


Figure 36: **(./figs/eneut.pdf)**

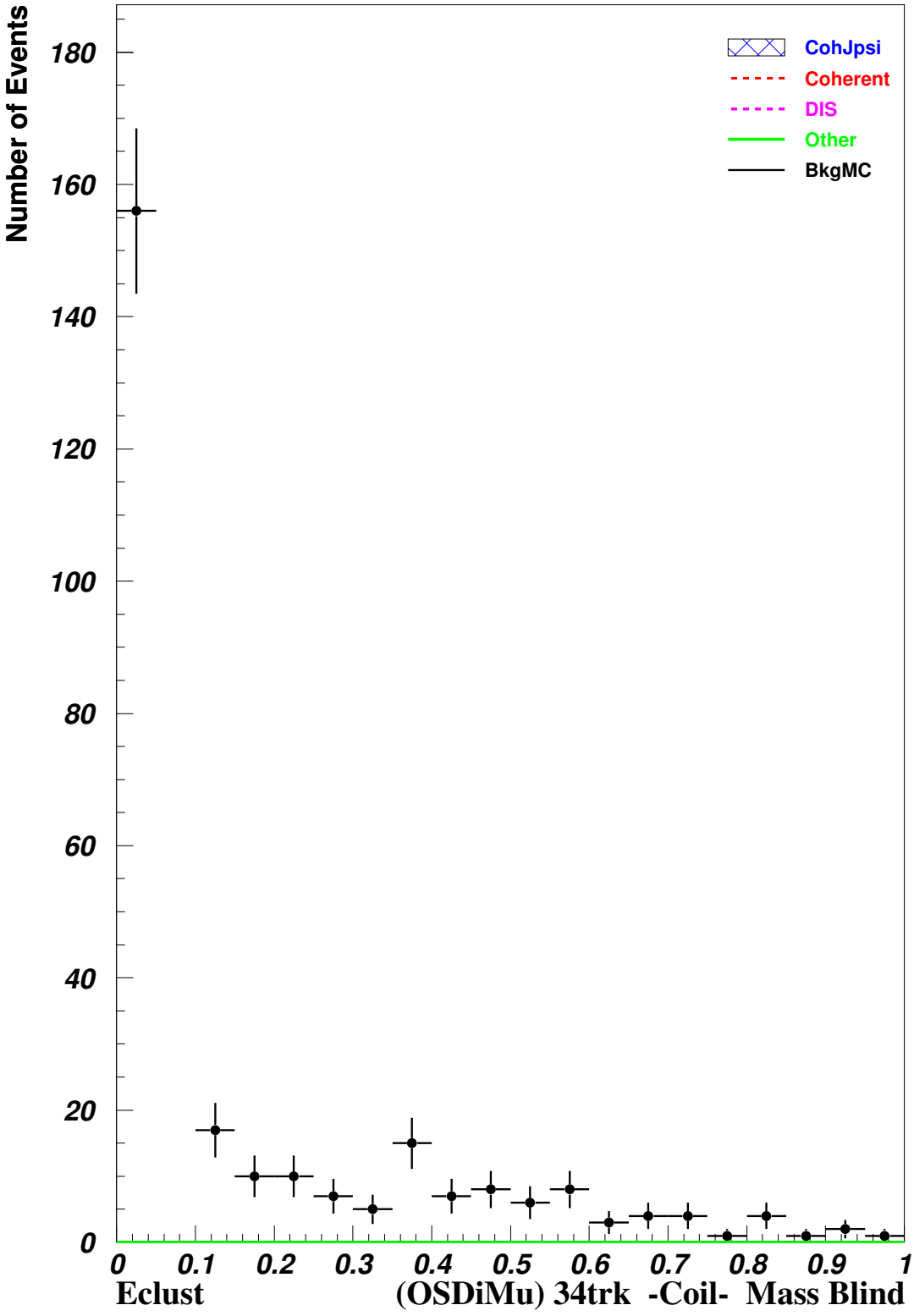


Figure 37: **(./figs/eneut-mb.pdf)**

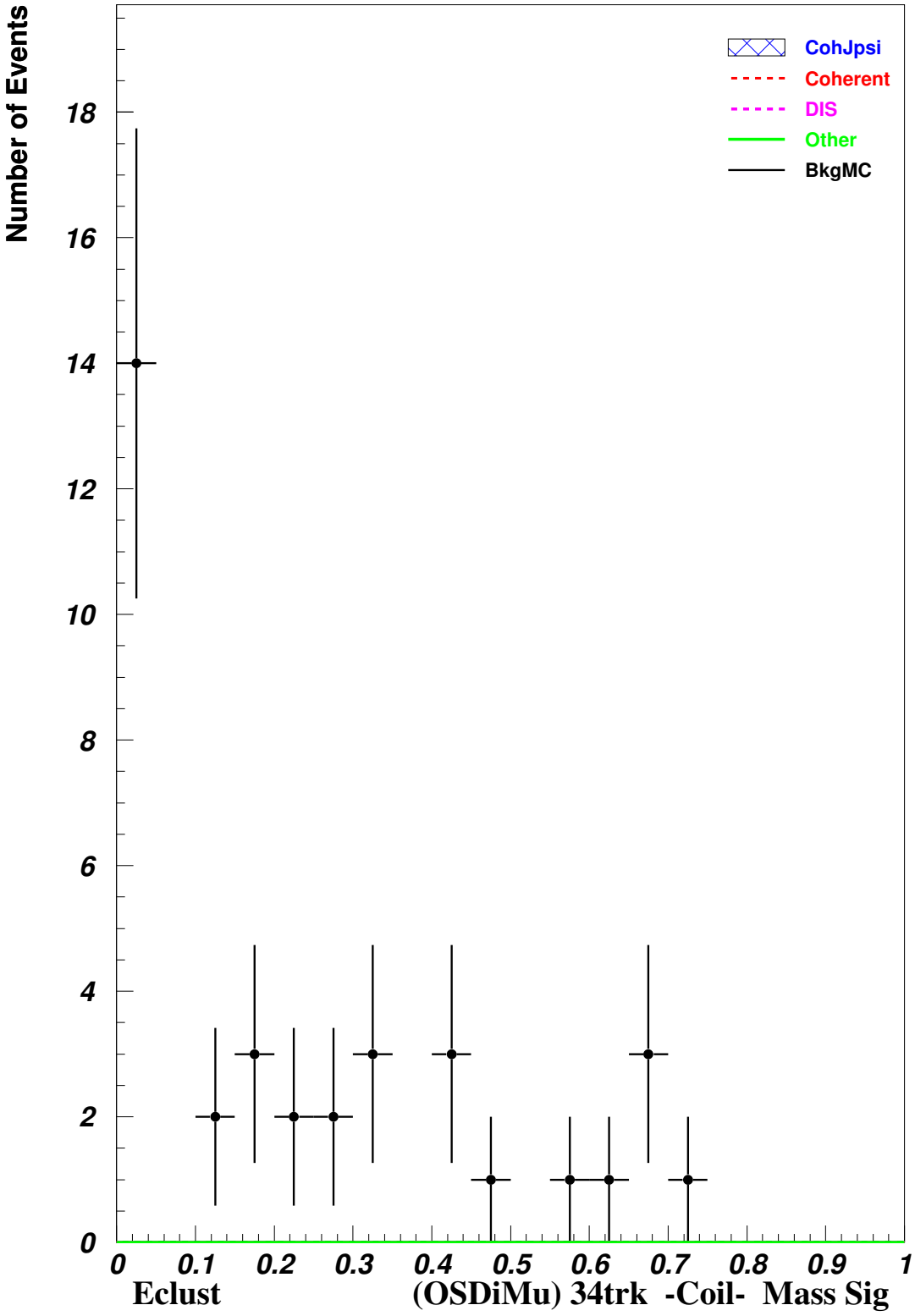


Figure 38: **(./figs/eneut-msig.pdf)**

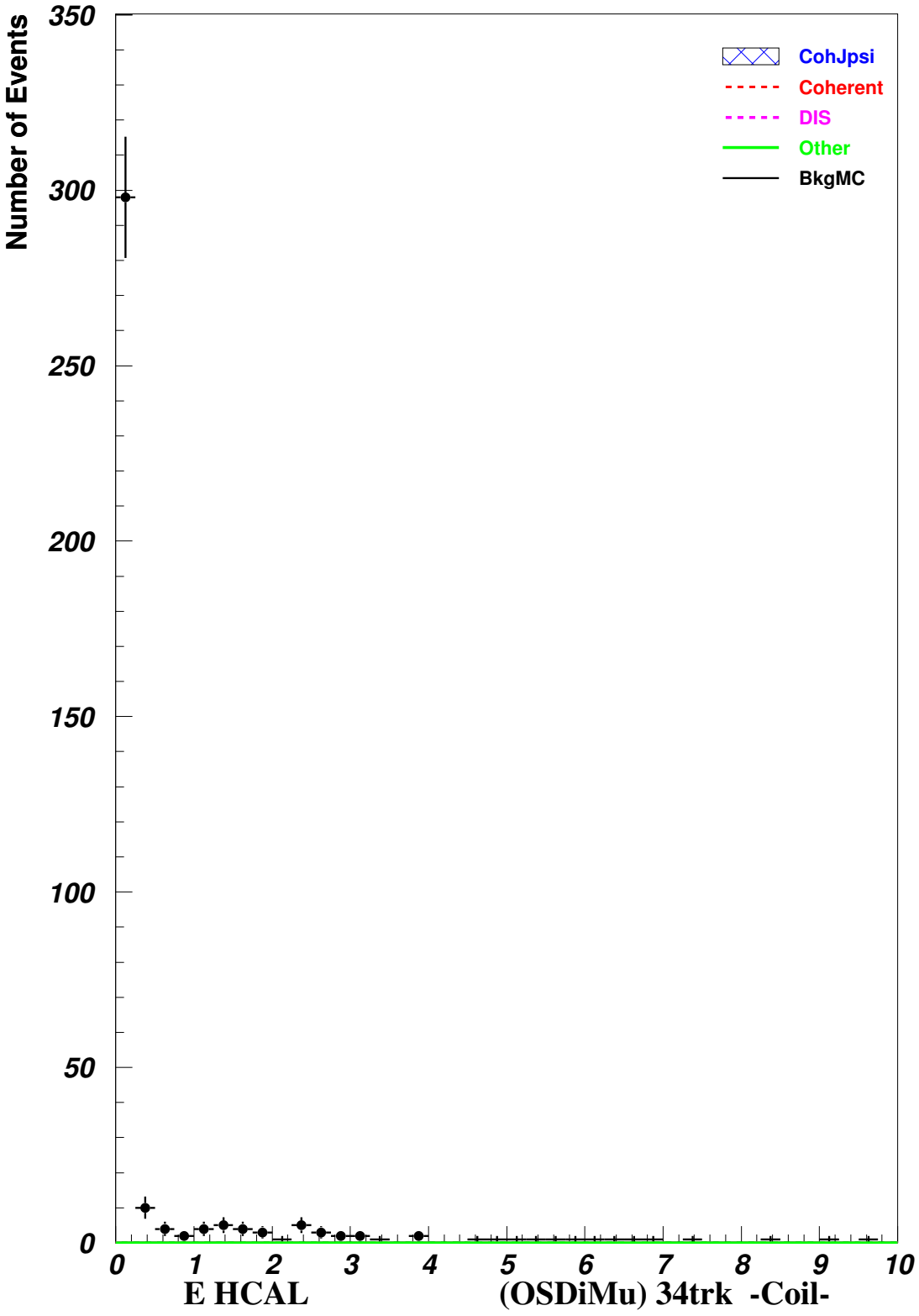


Figure 39: **(./figs/ehcal.pdf)**

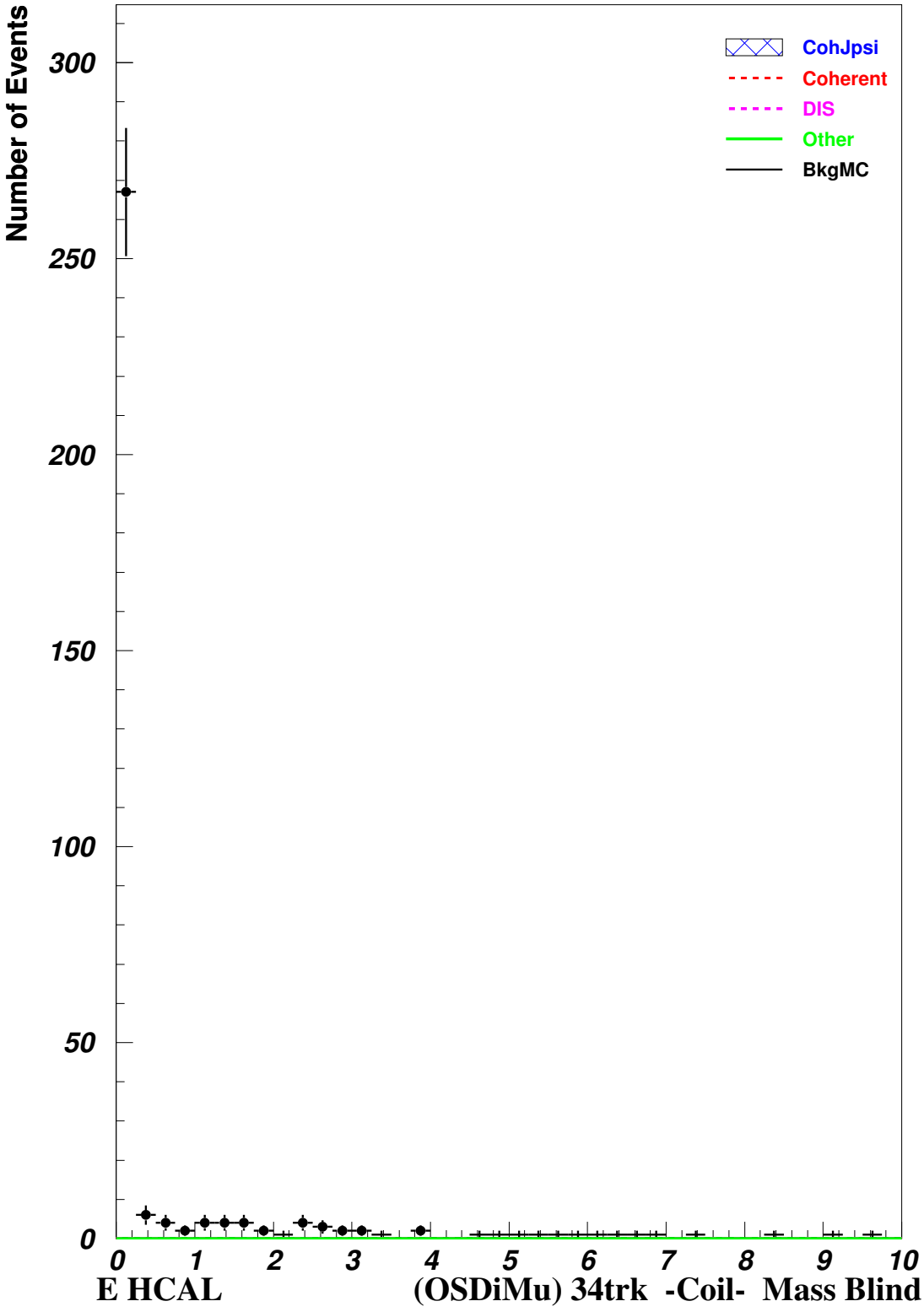


Figure 40: **(./figs/ehcal-mb.pdf)**

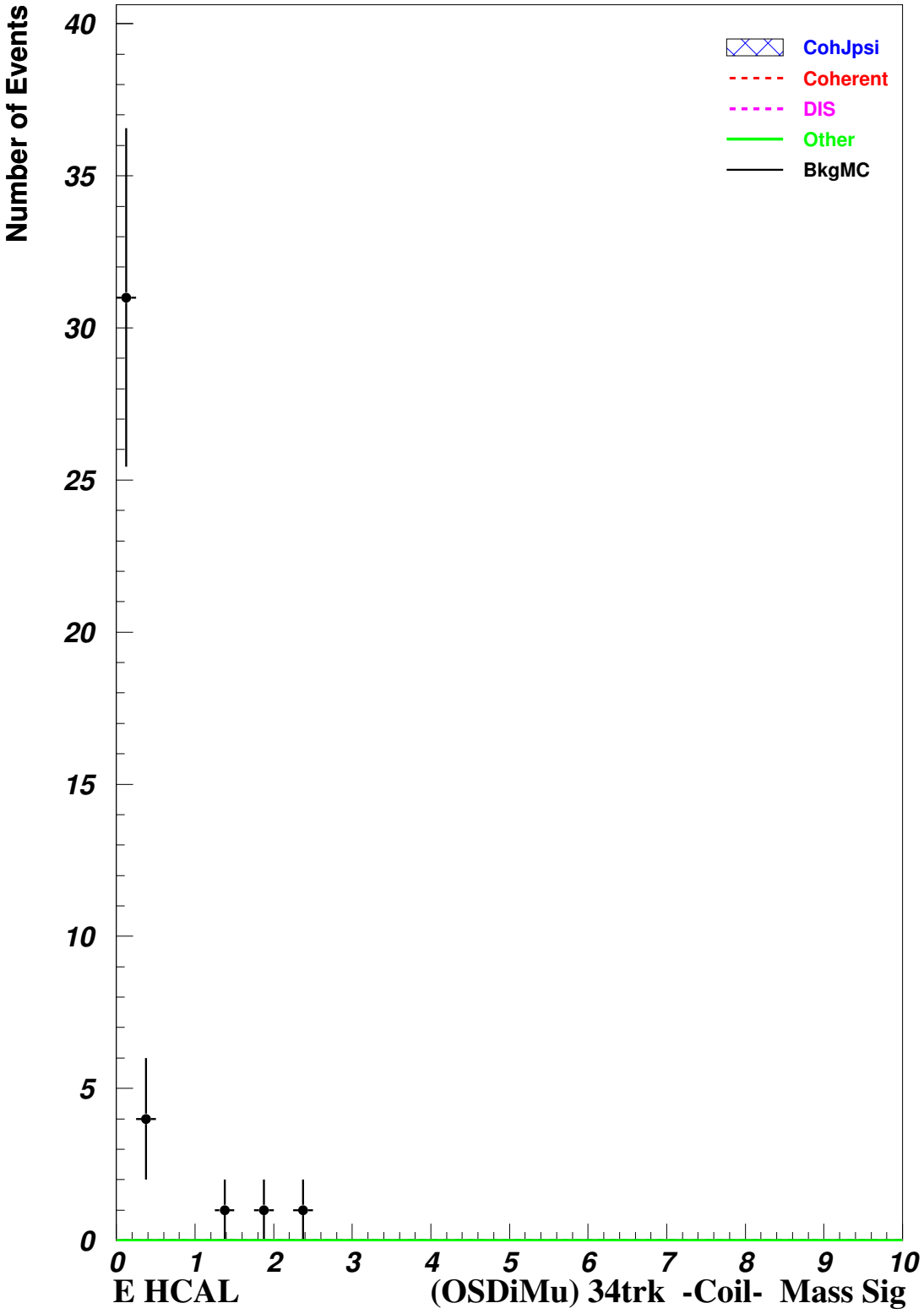


Figure 41: **(./figs/ehcal-msig.pdf)**

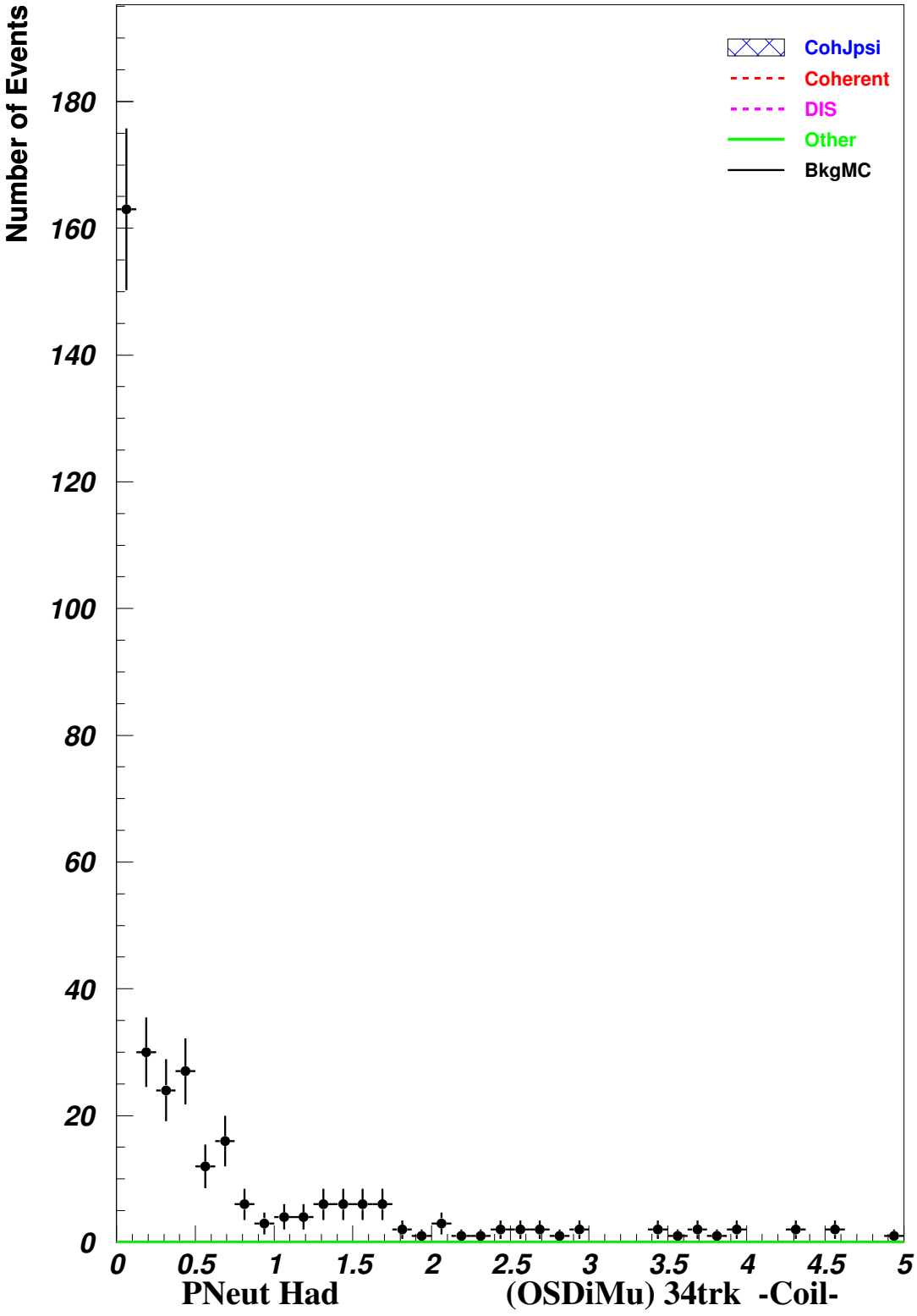


Figure 42: **(./figs/pneuth.pdf)**

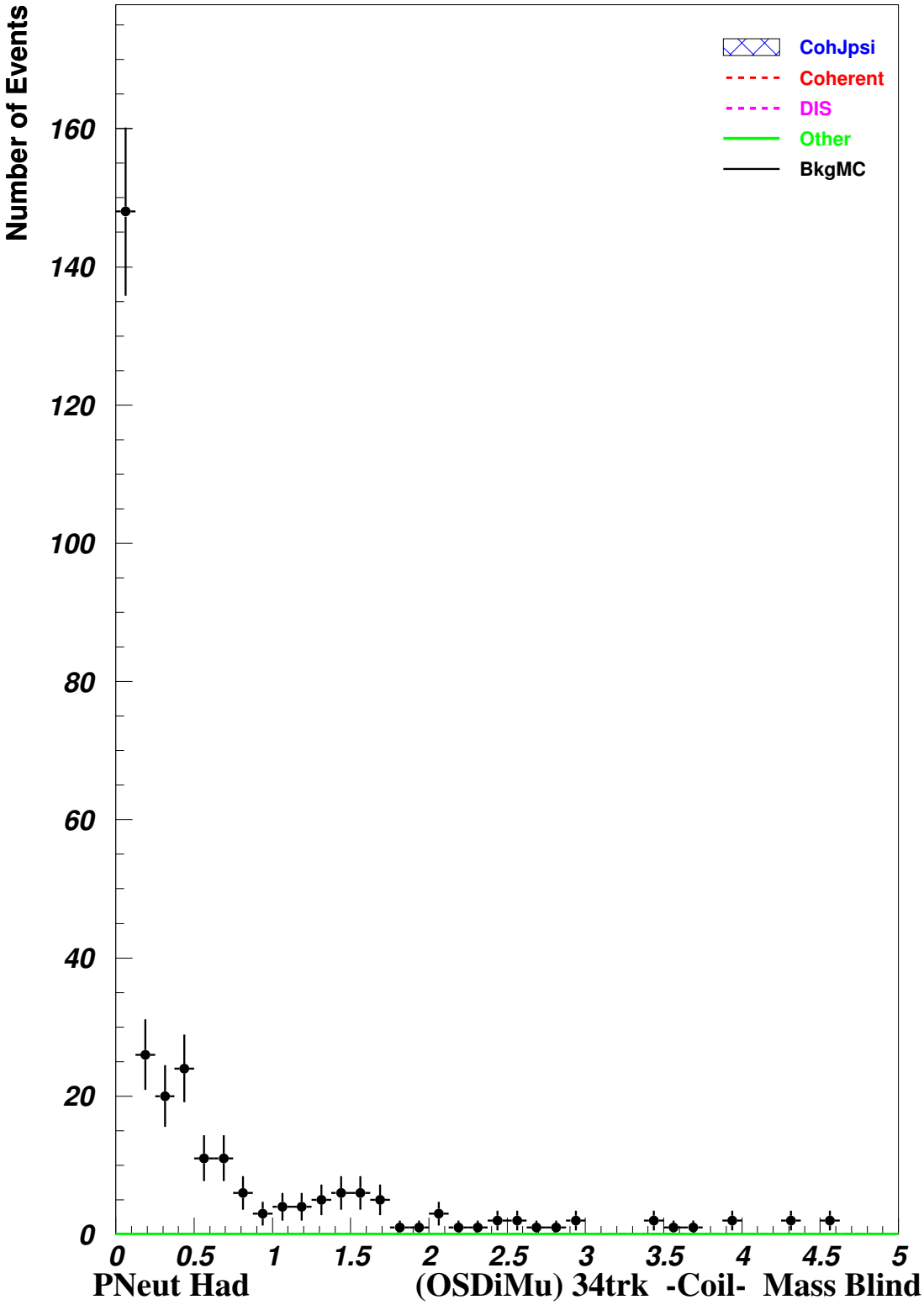


Figure 43: **(./figs/pneuth-mb.pdf)**

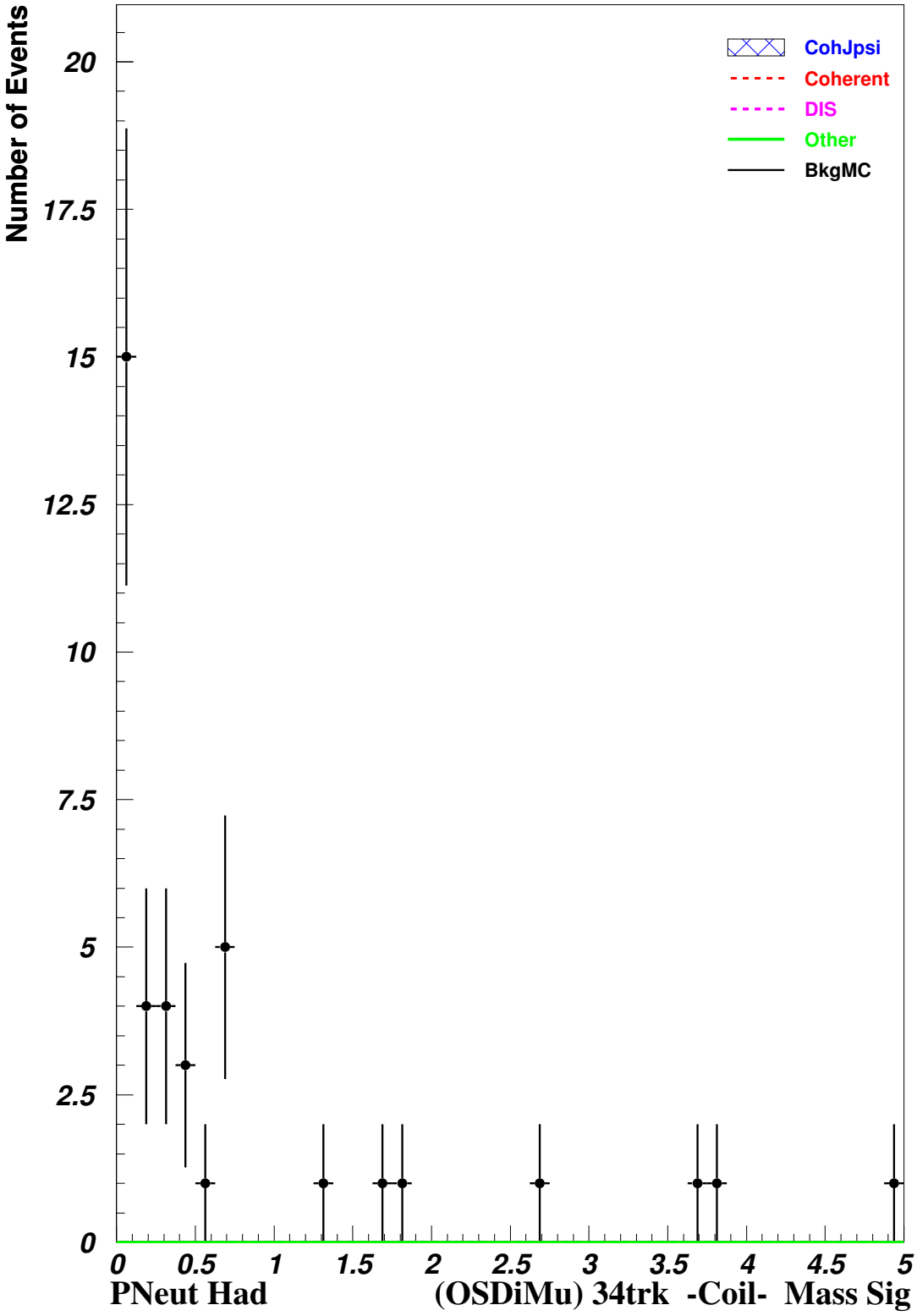


Figure 44: **(./figs/pneuth-msig.pdf)**

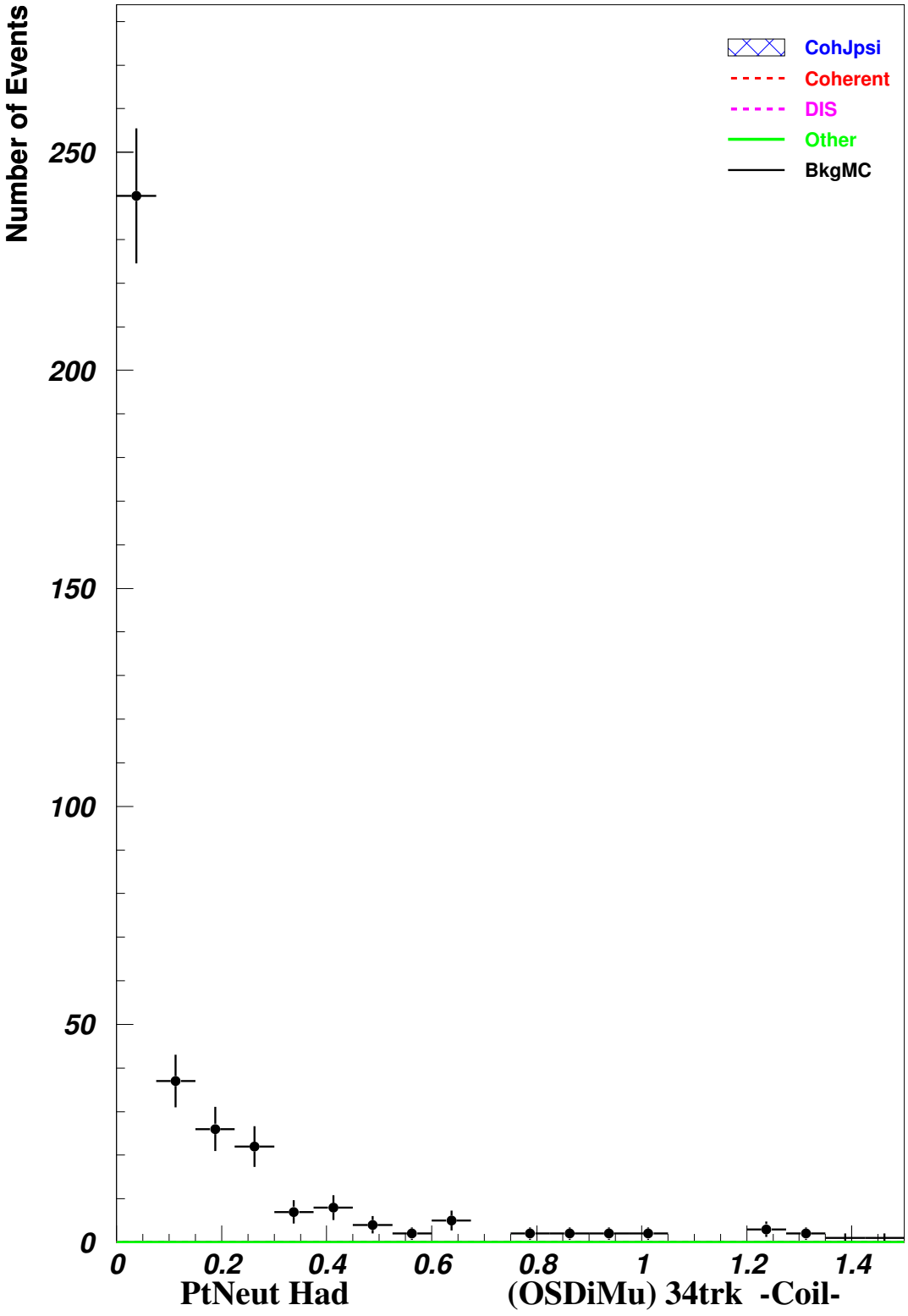


Figure 45: **(./figs/ptneuth.pdf)**

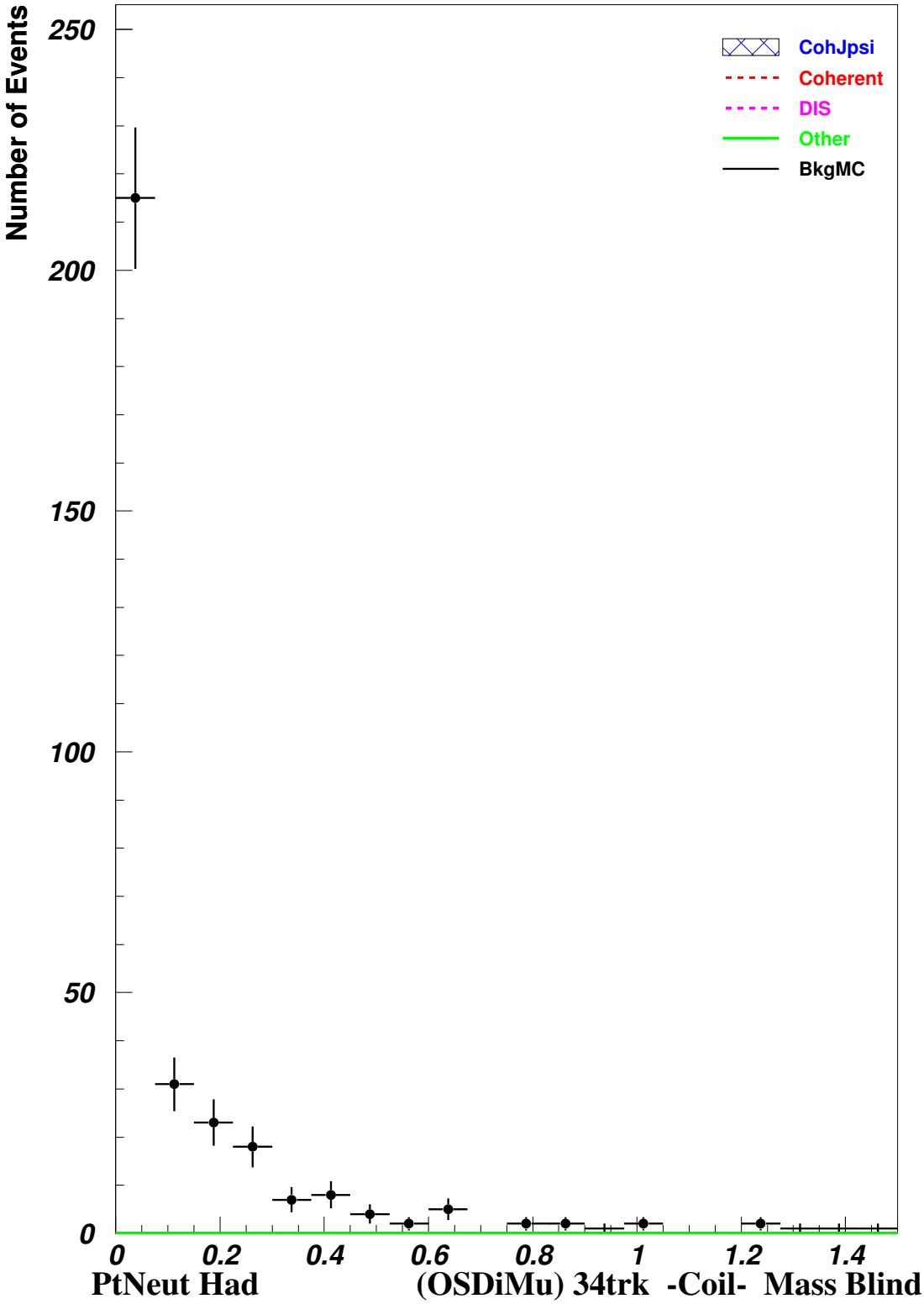


Figure 46: **(./figs/ptneuth-mb.pdf)**

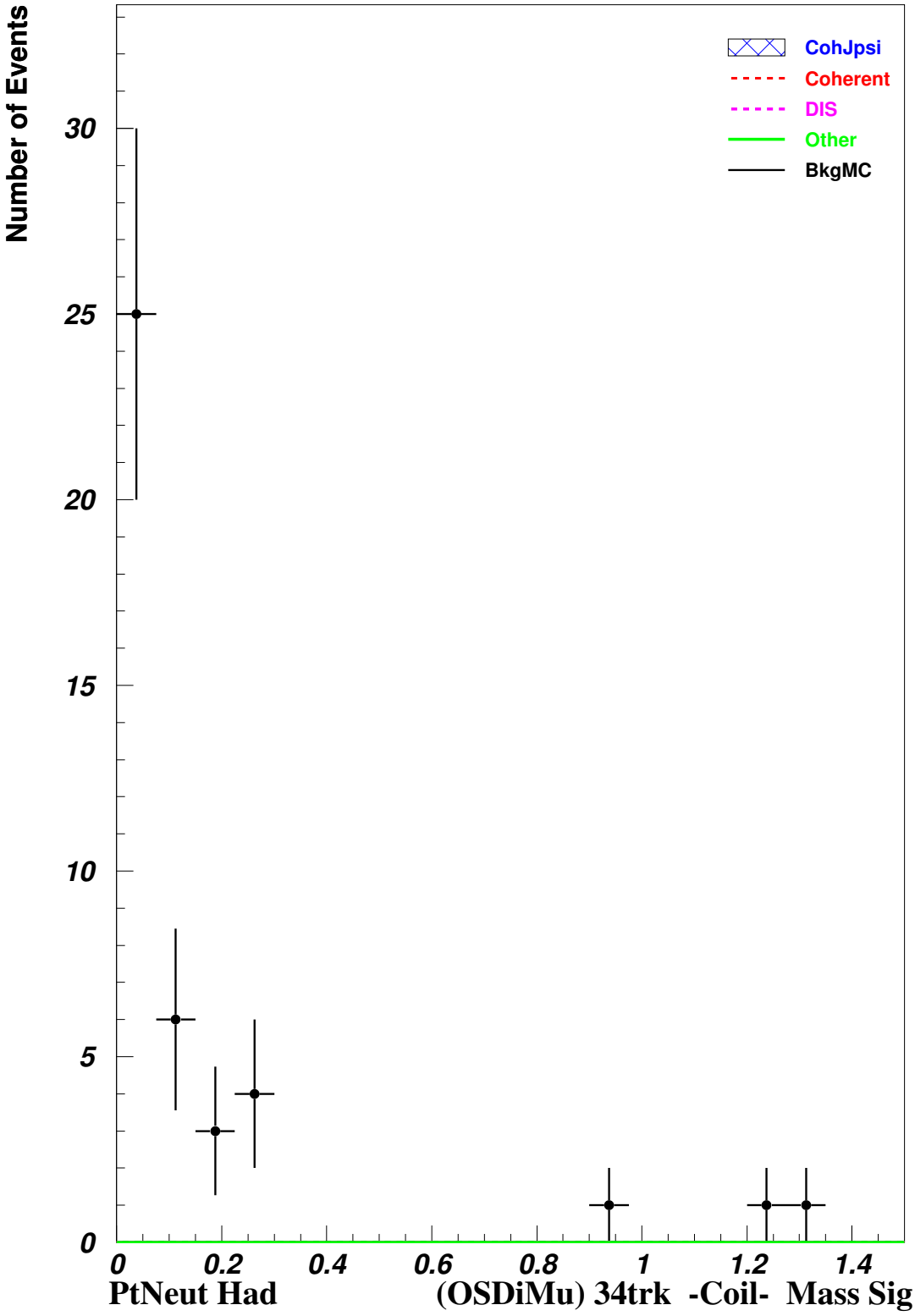


Figure 47: **(./figs/ptneuth-msig.pdf)**

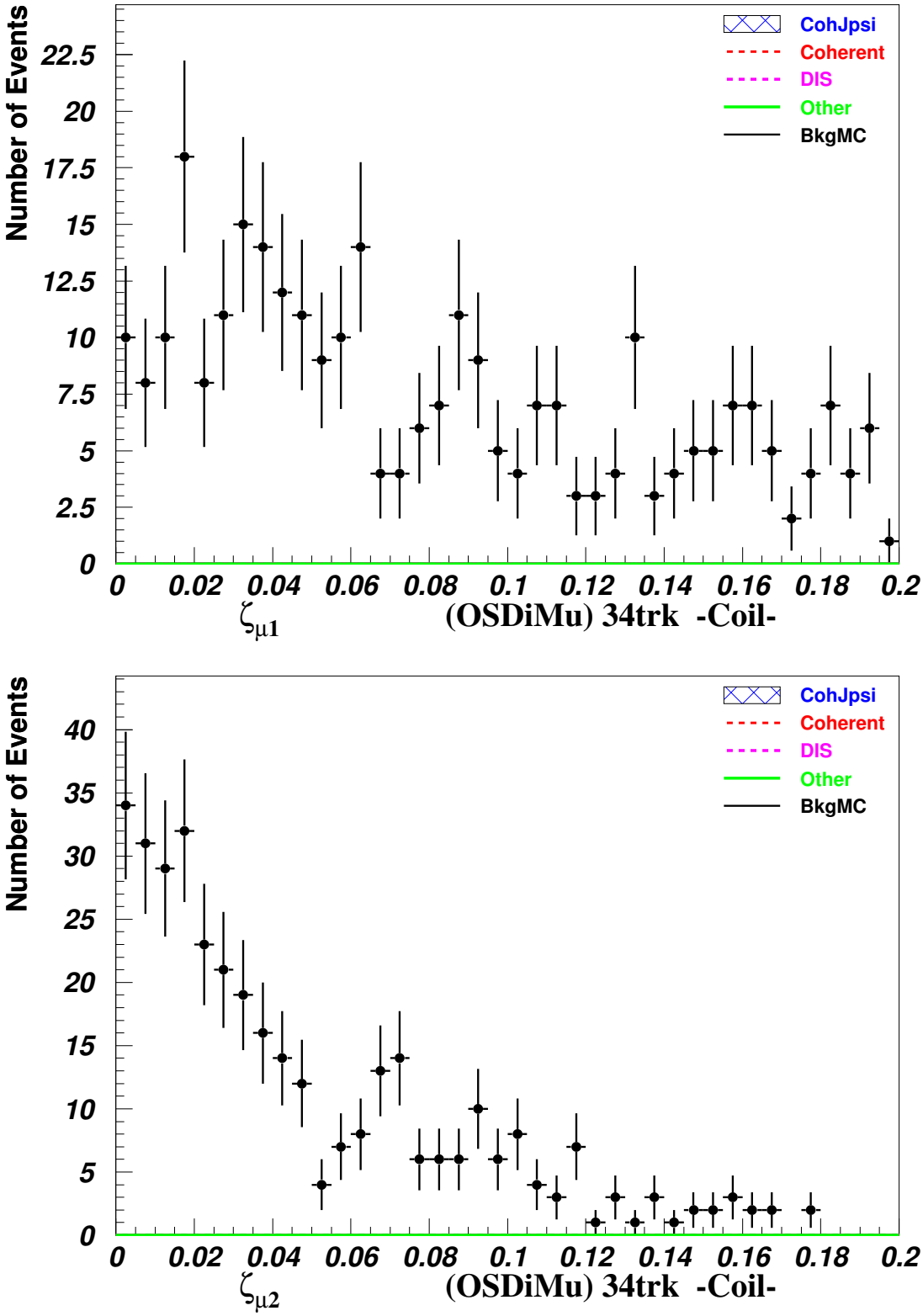


Figure 48: **(./figs/zeta1+2.pdf)**

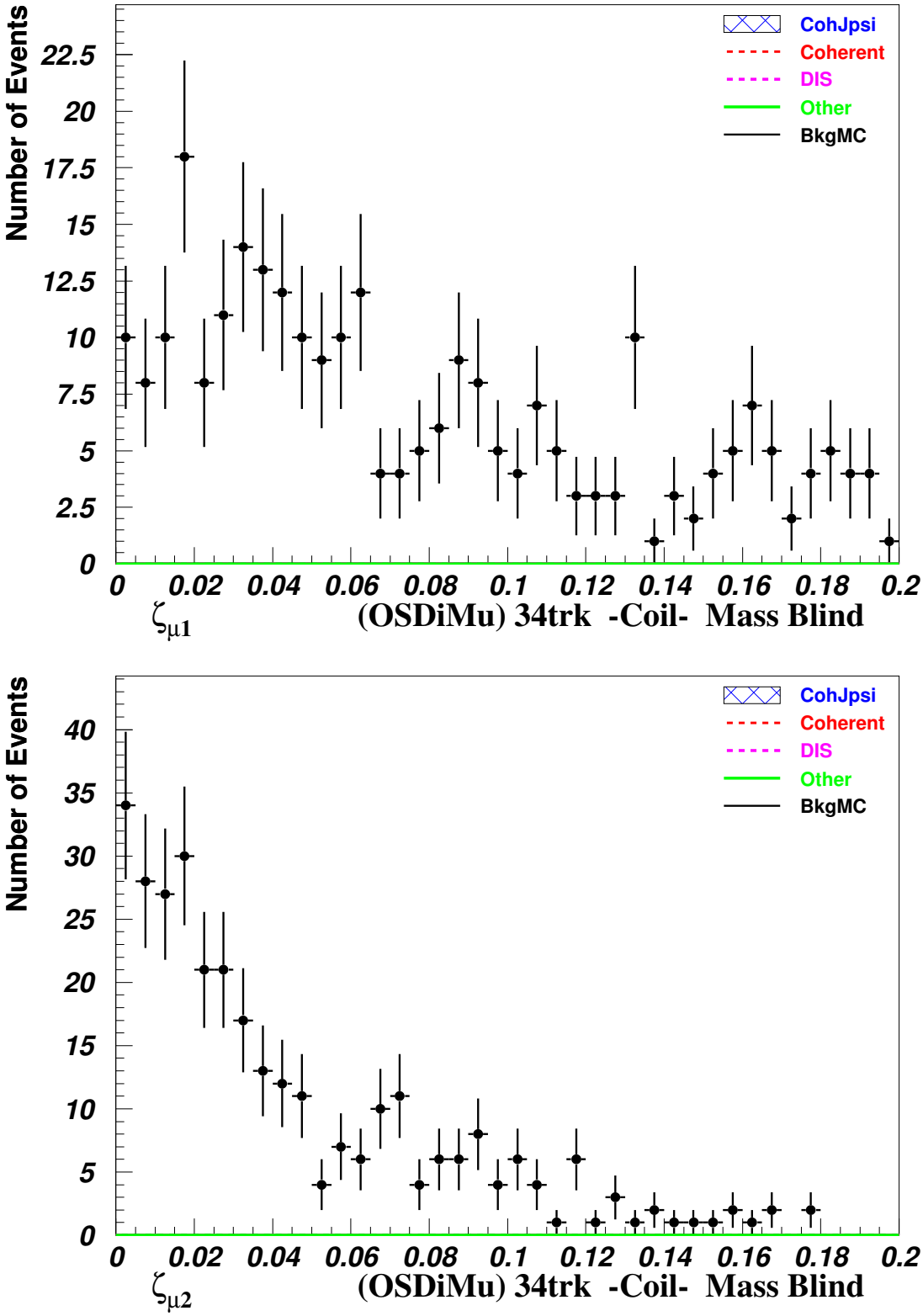


Figure 49: **(./figs/zeta1+2-mb.pdf)**

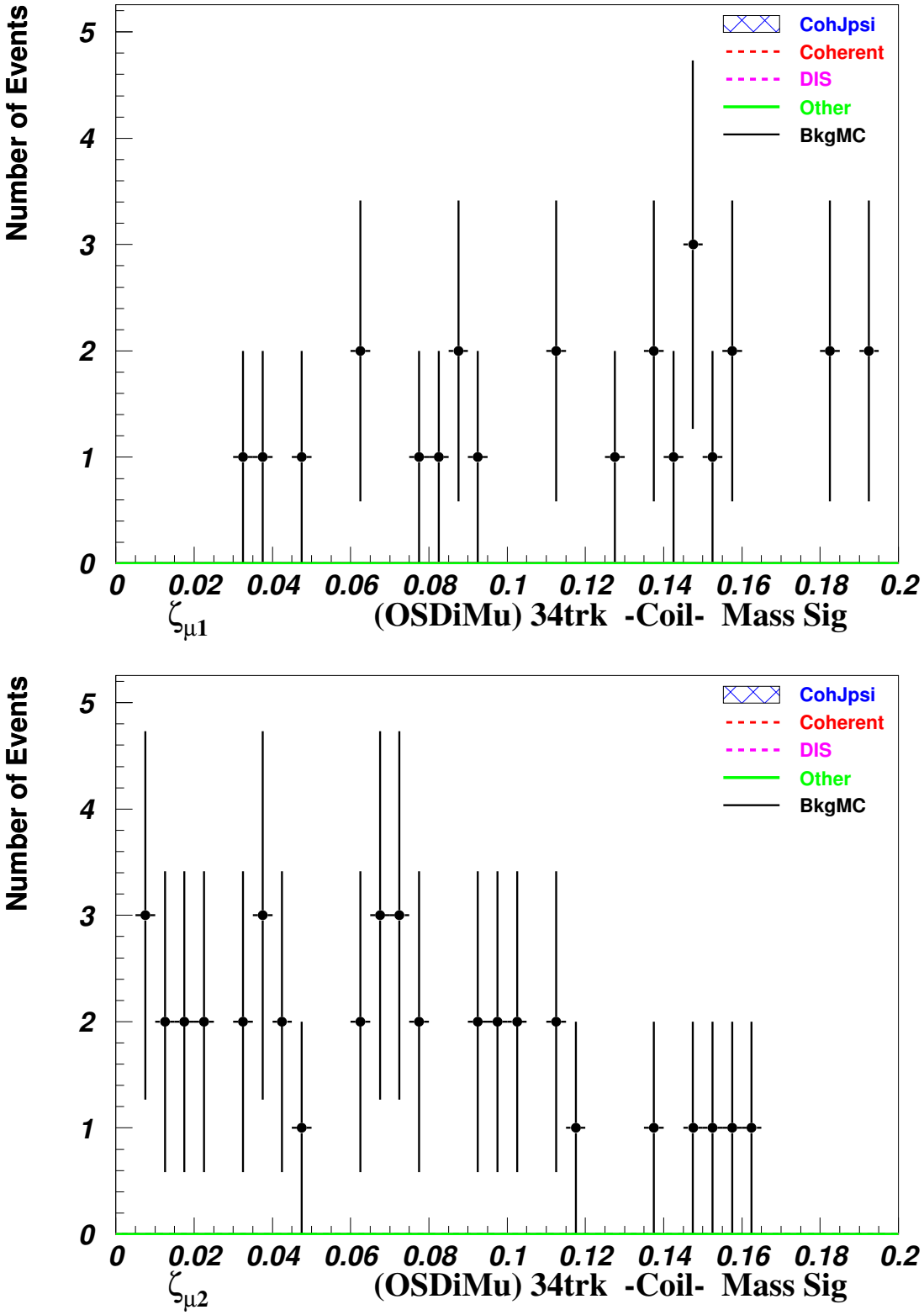


Figure 50: **(./figs/zeta1+2-msig.pdf)**

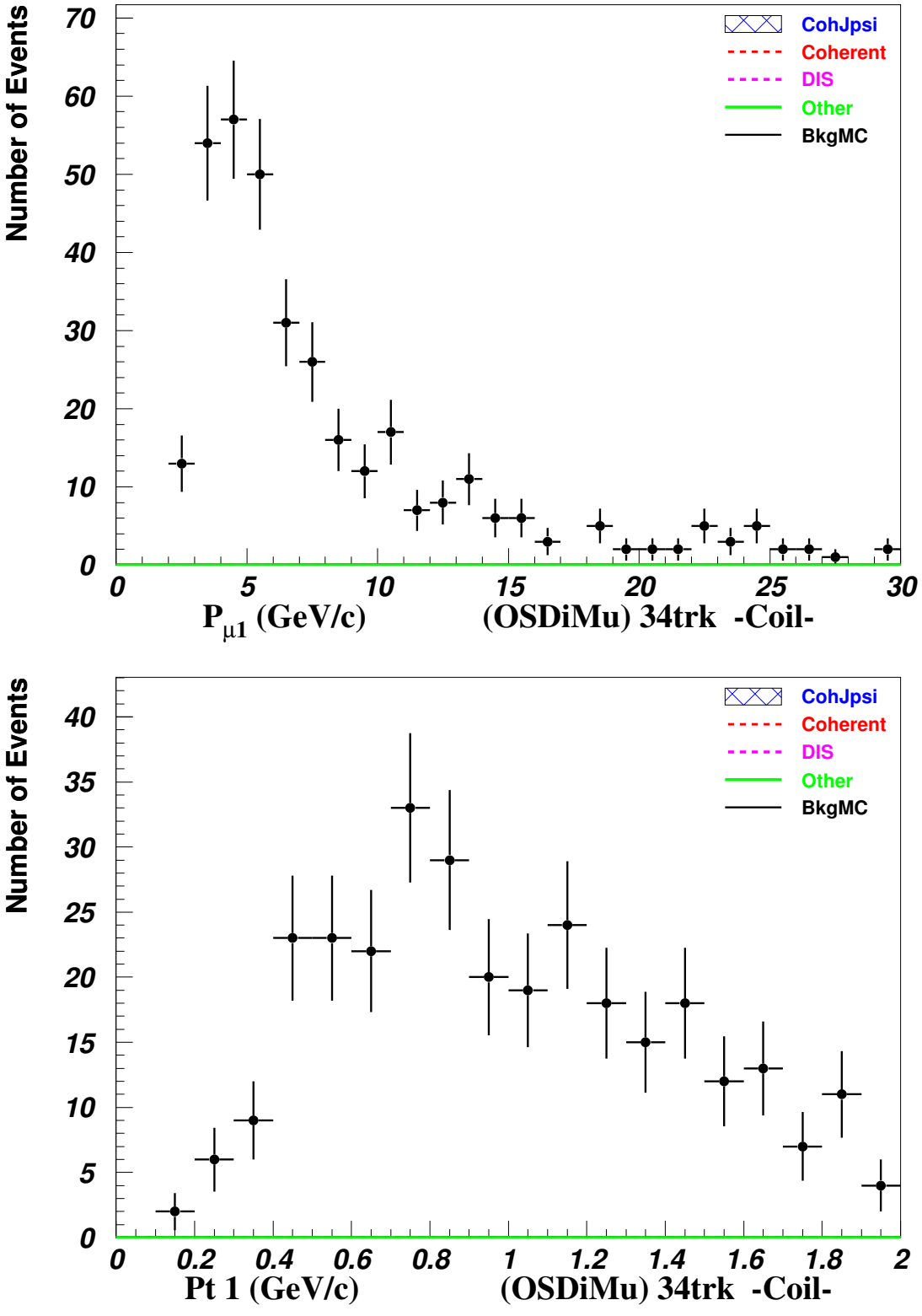


Figure 51: **(./figs/p-pt-muneg.pdf)**

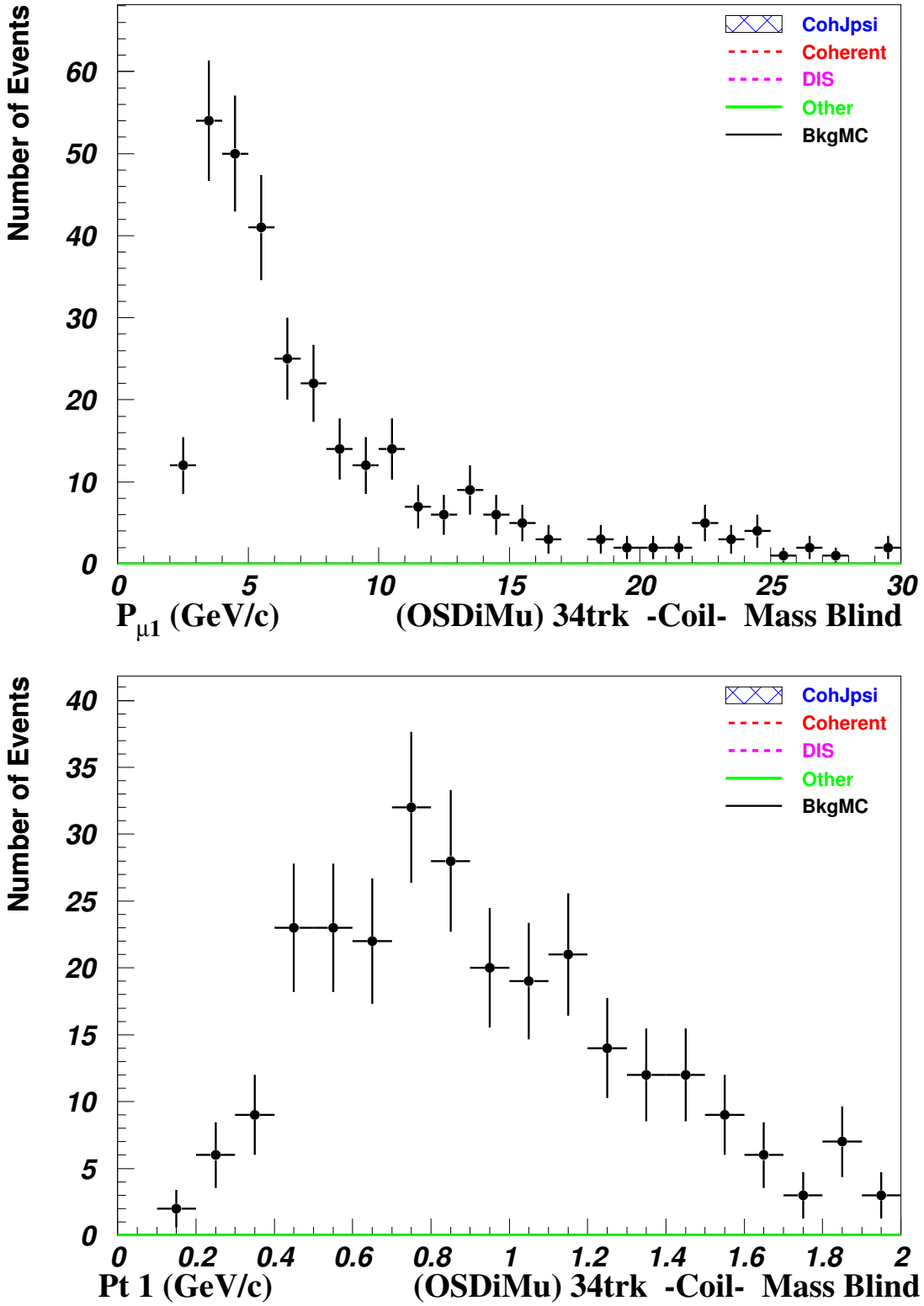


Figure 52: (./figs/p-pt-muneg-mb.pdf)

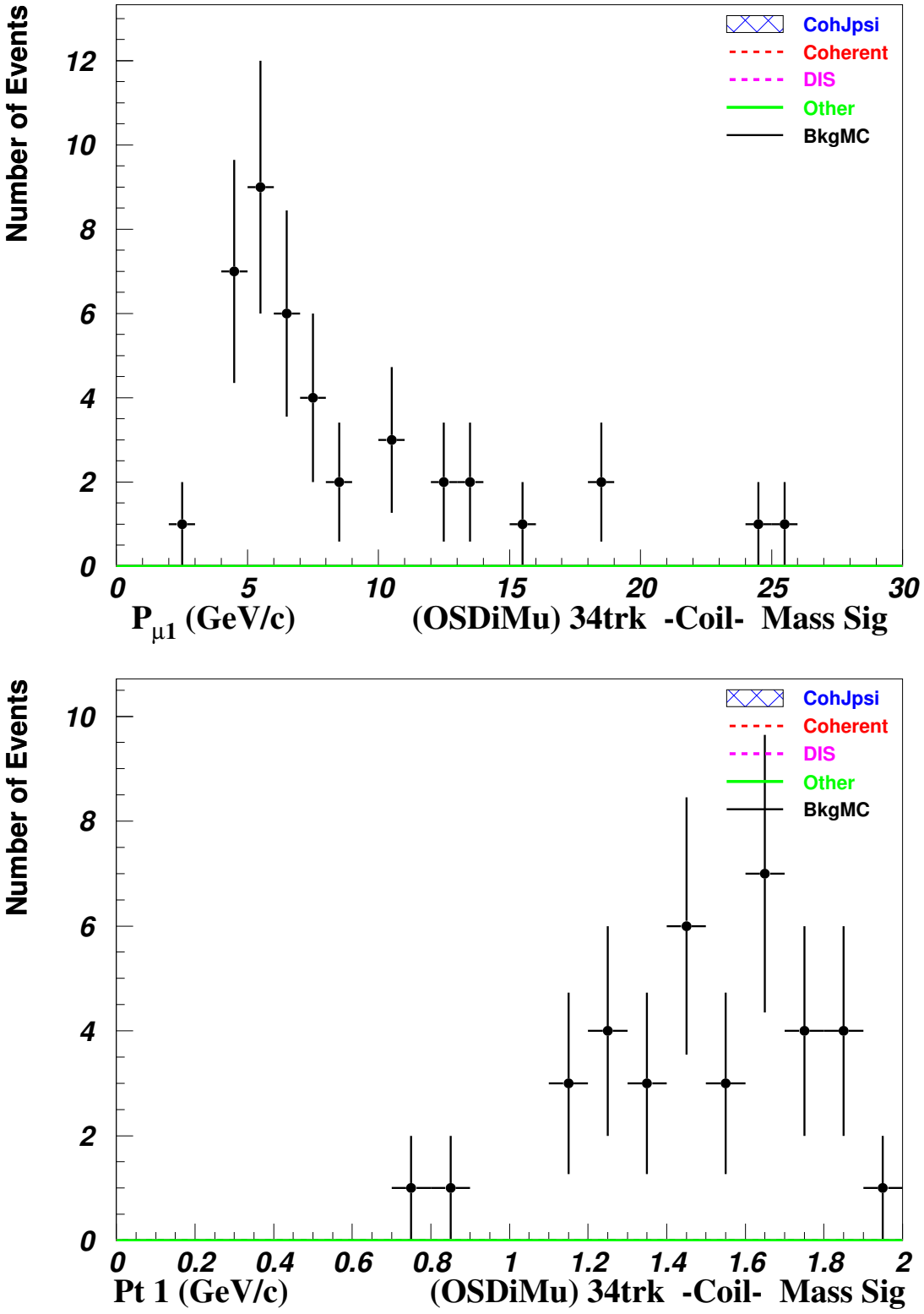


Figure 53: (./figs/p-pt-muneg-msig.pdf)

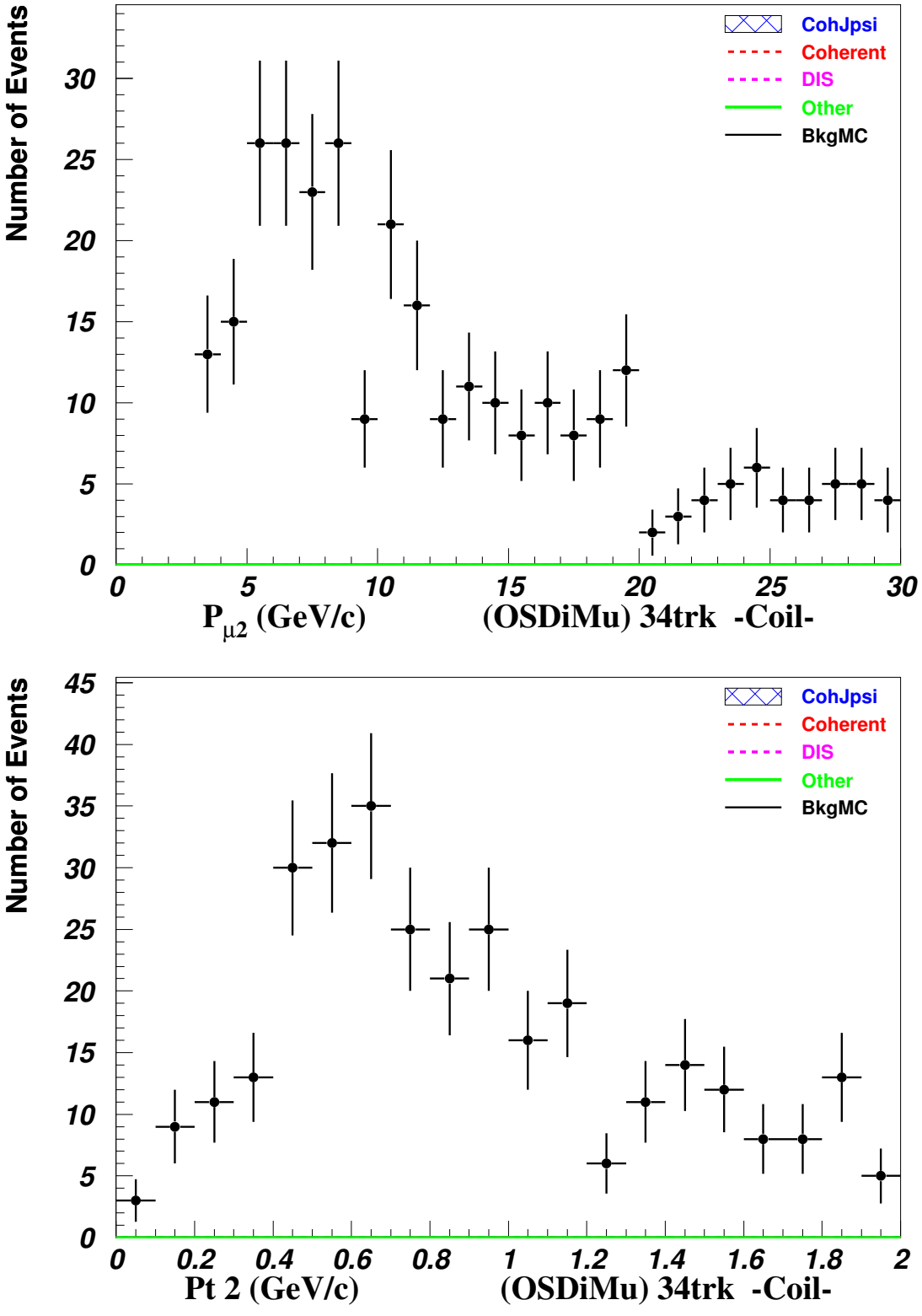


Figure 54: **(./figs/p-pt-mupos.pdf)**

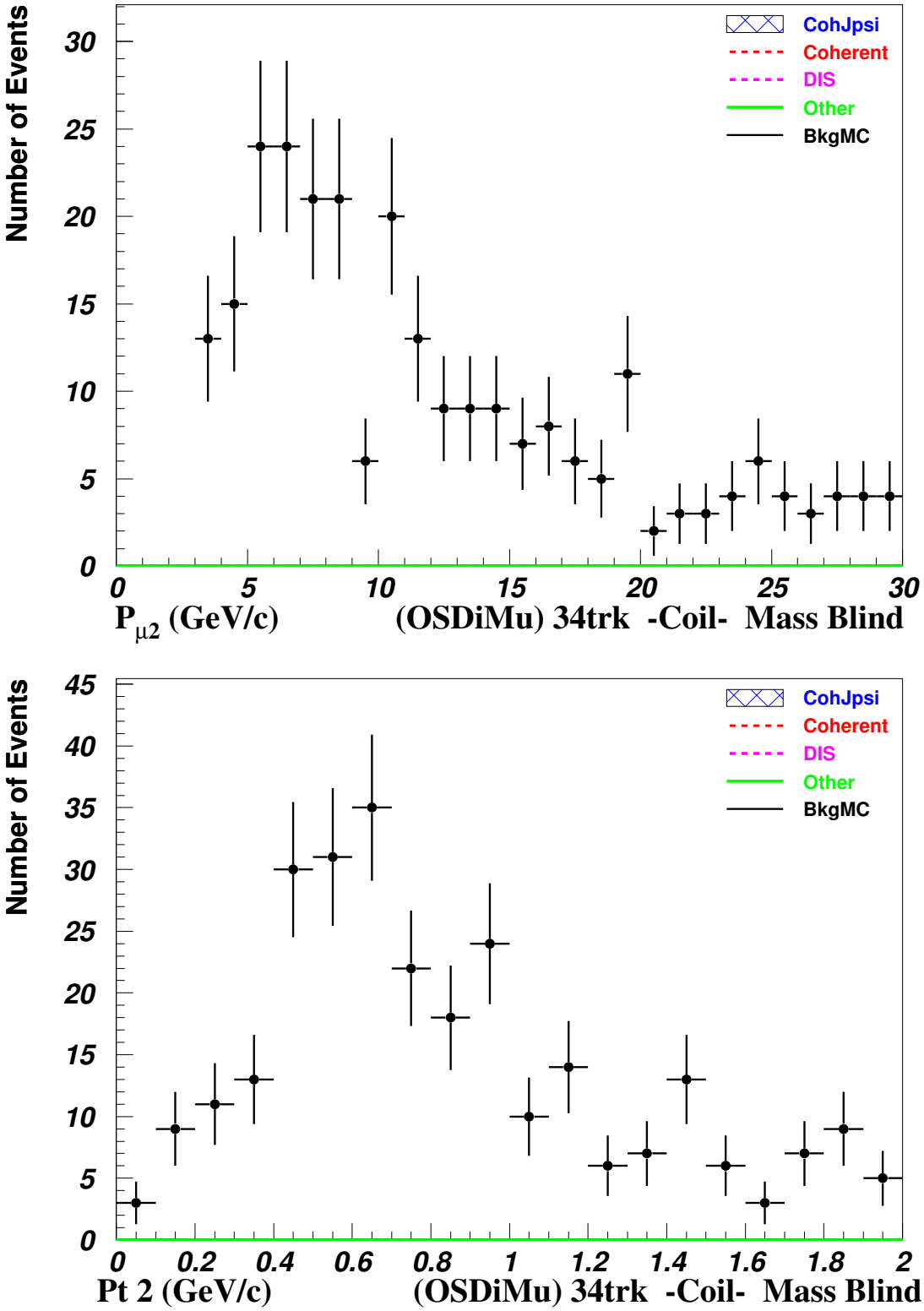


Figure 55: (./figs/p-pt-mupos-mb.pdf)

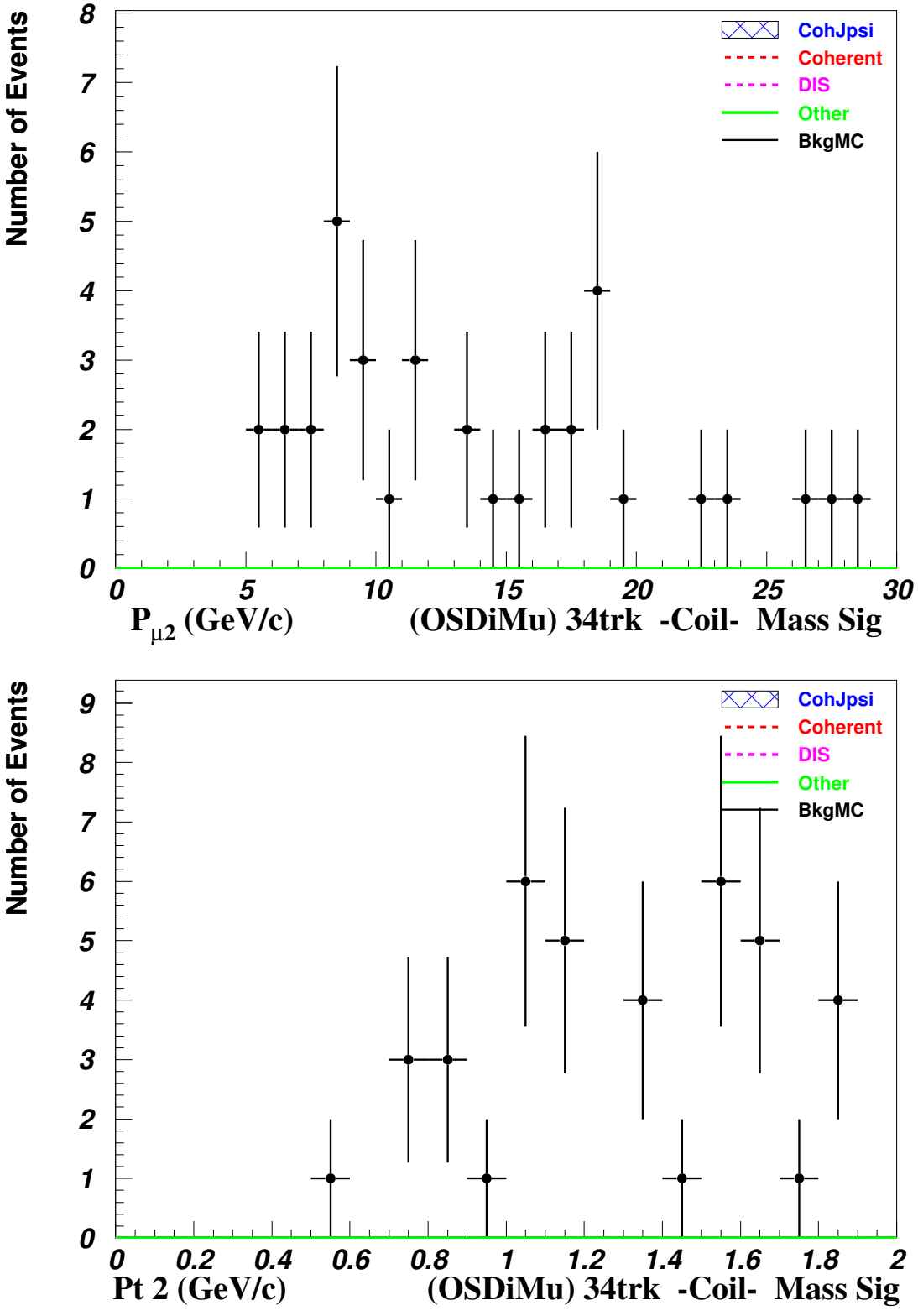


Figure 56: **(./figs/p-pt-mupos-msig.pdf)**

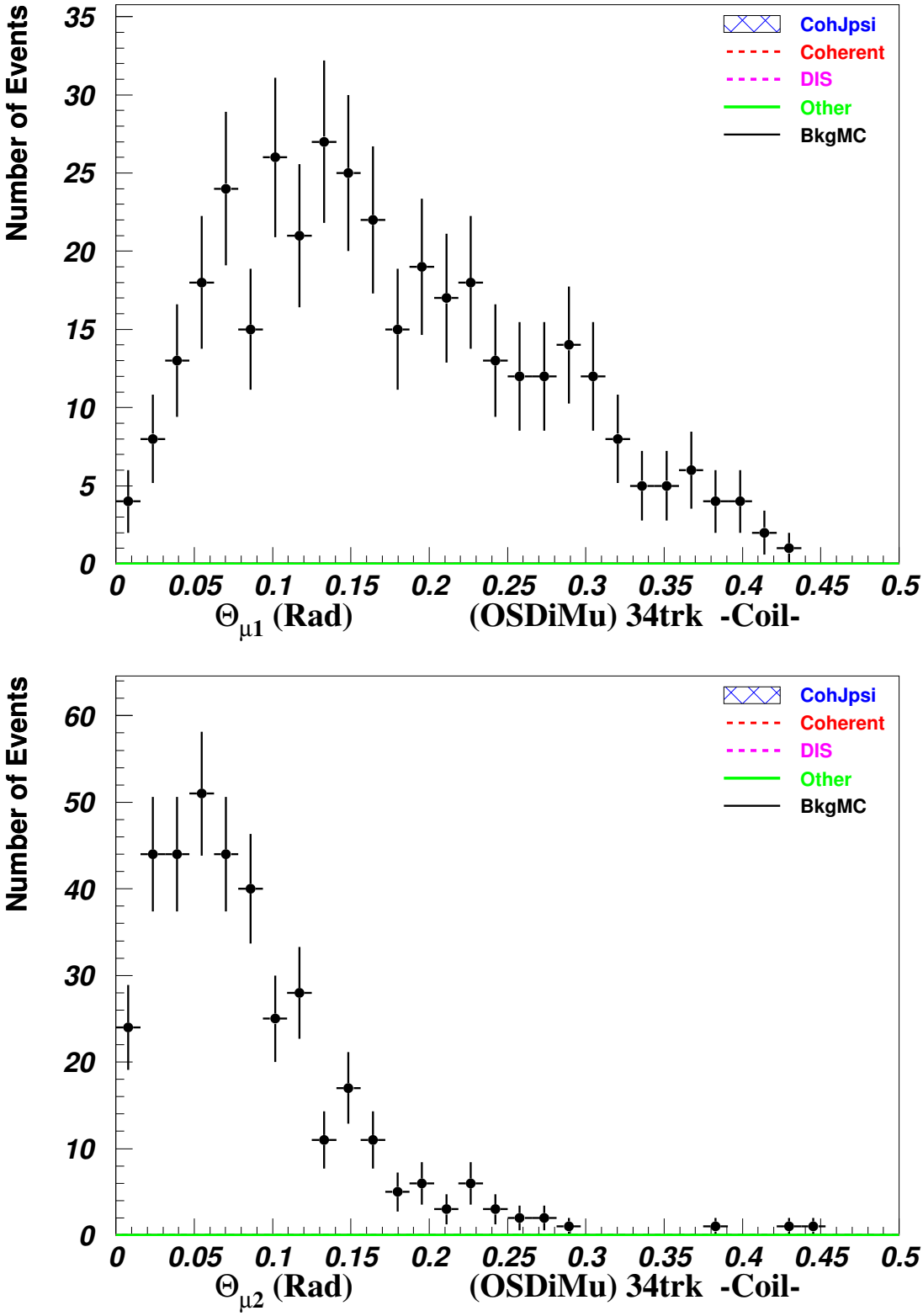


Figure 57: **(./figs/theta1+2.pdf)**

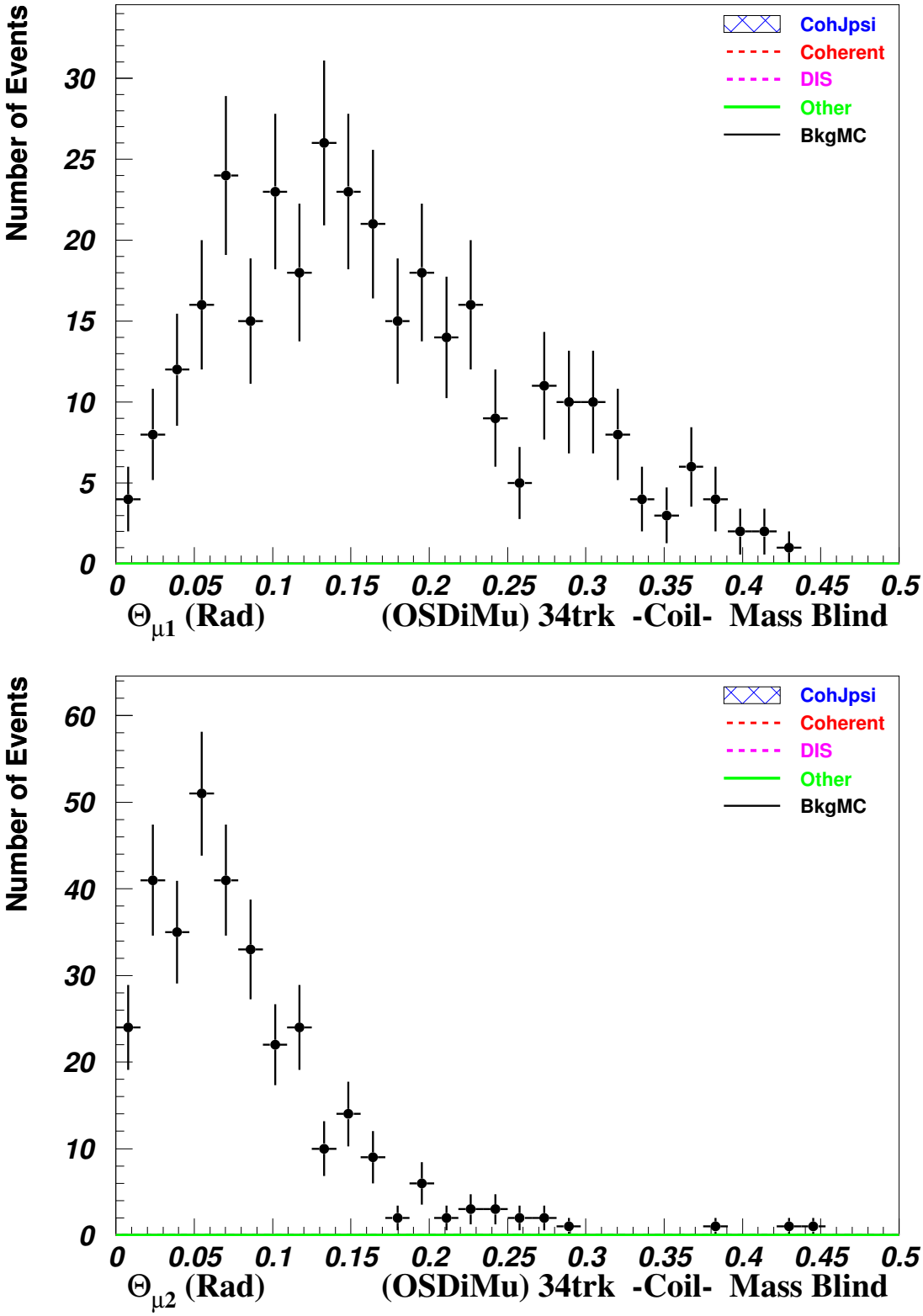


Figure 58: **(./figs/theta1+2-mb.pdf)**

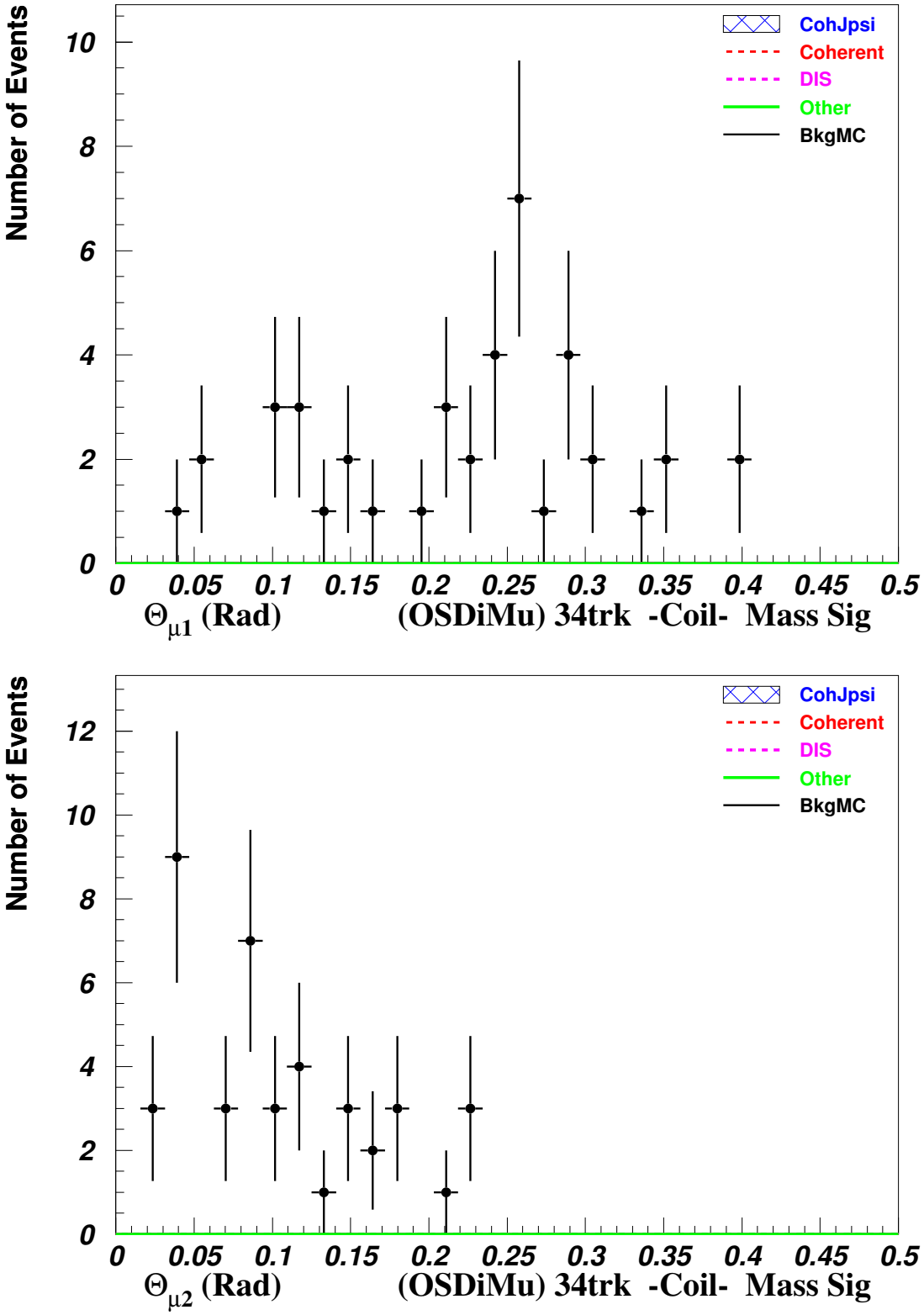


Figure 59: **(./figs/theta1+2-msig.pdf)**

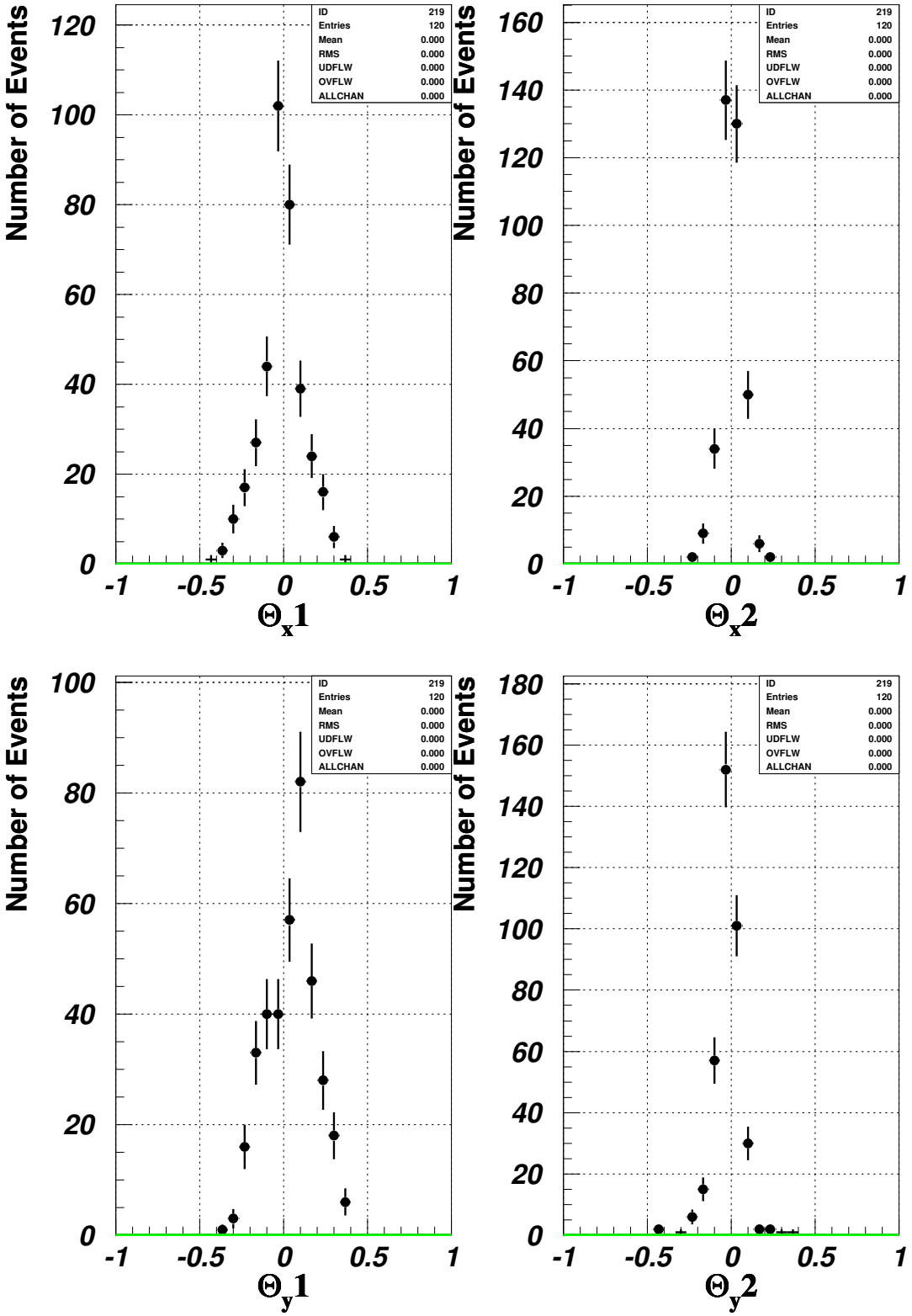


Figure 60: **(./figs/thetaxy.pdf)**