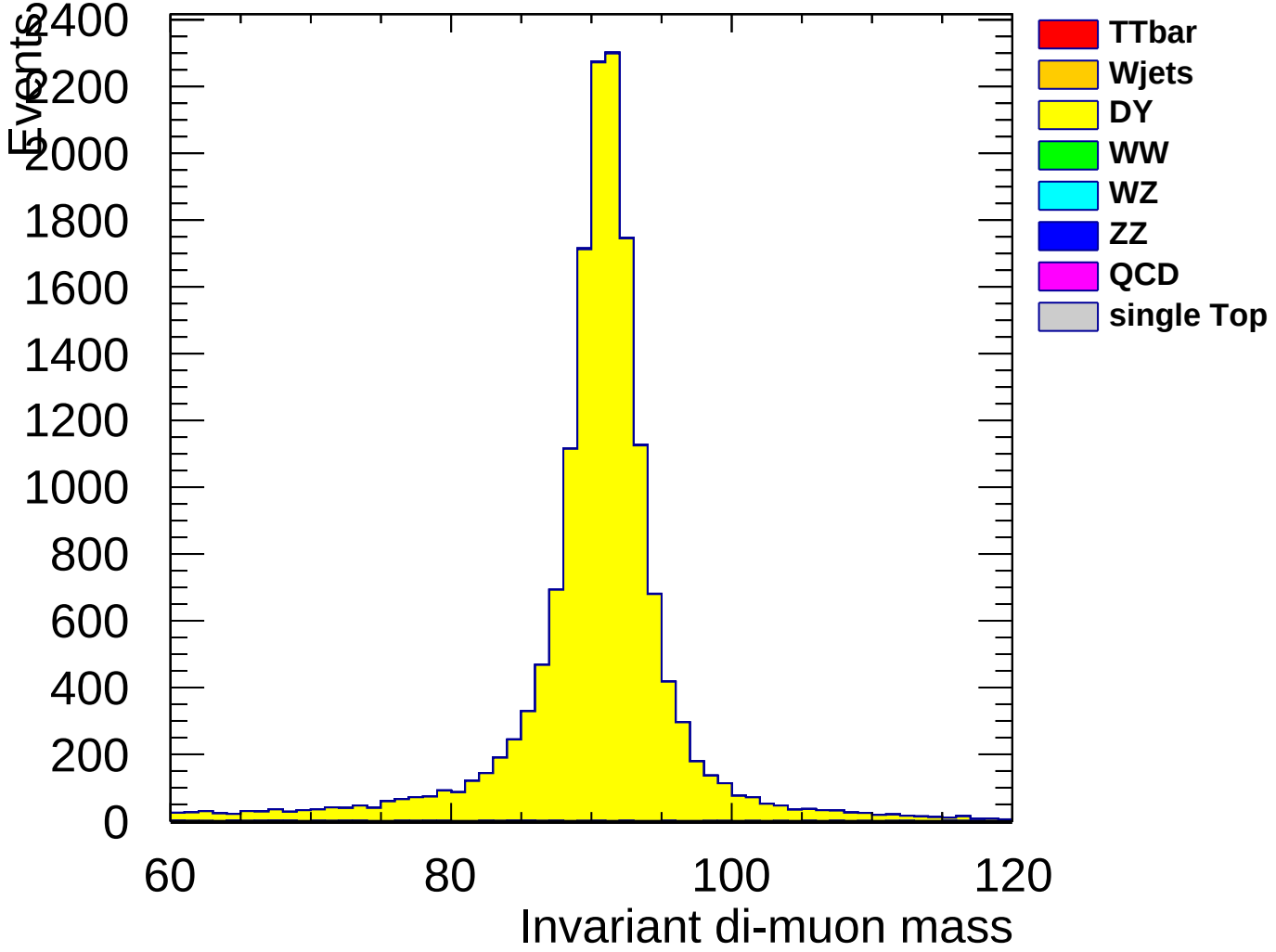
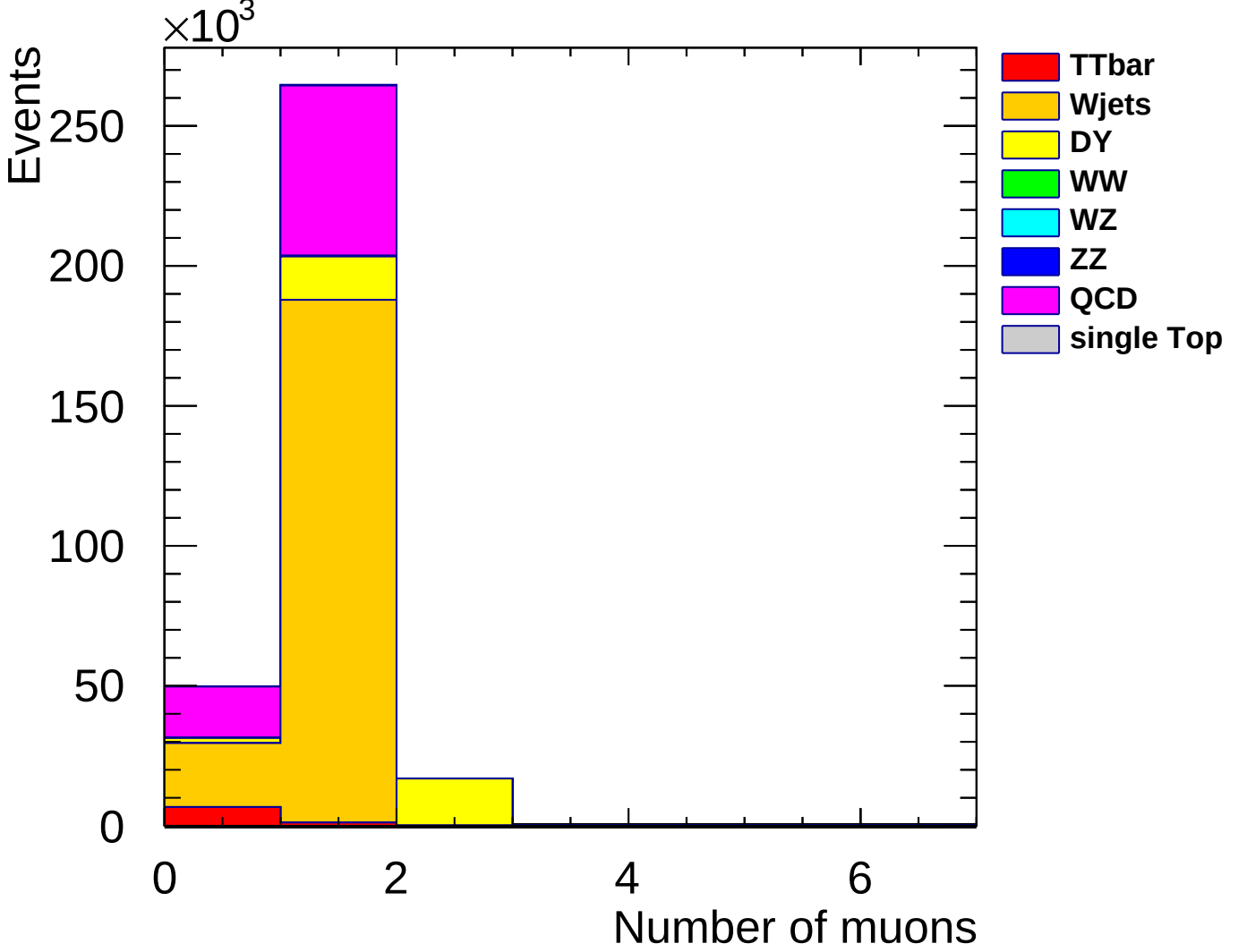
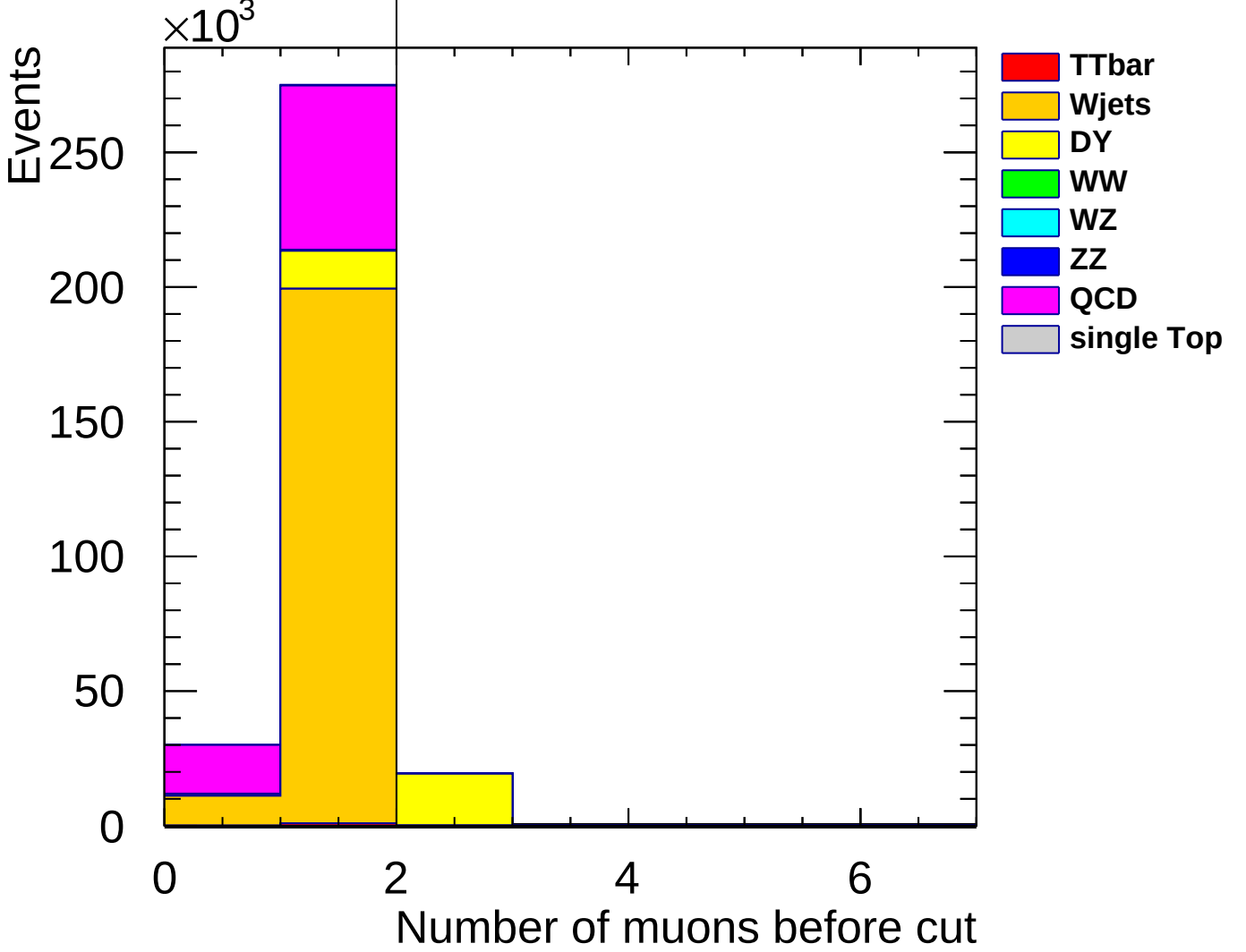
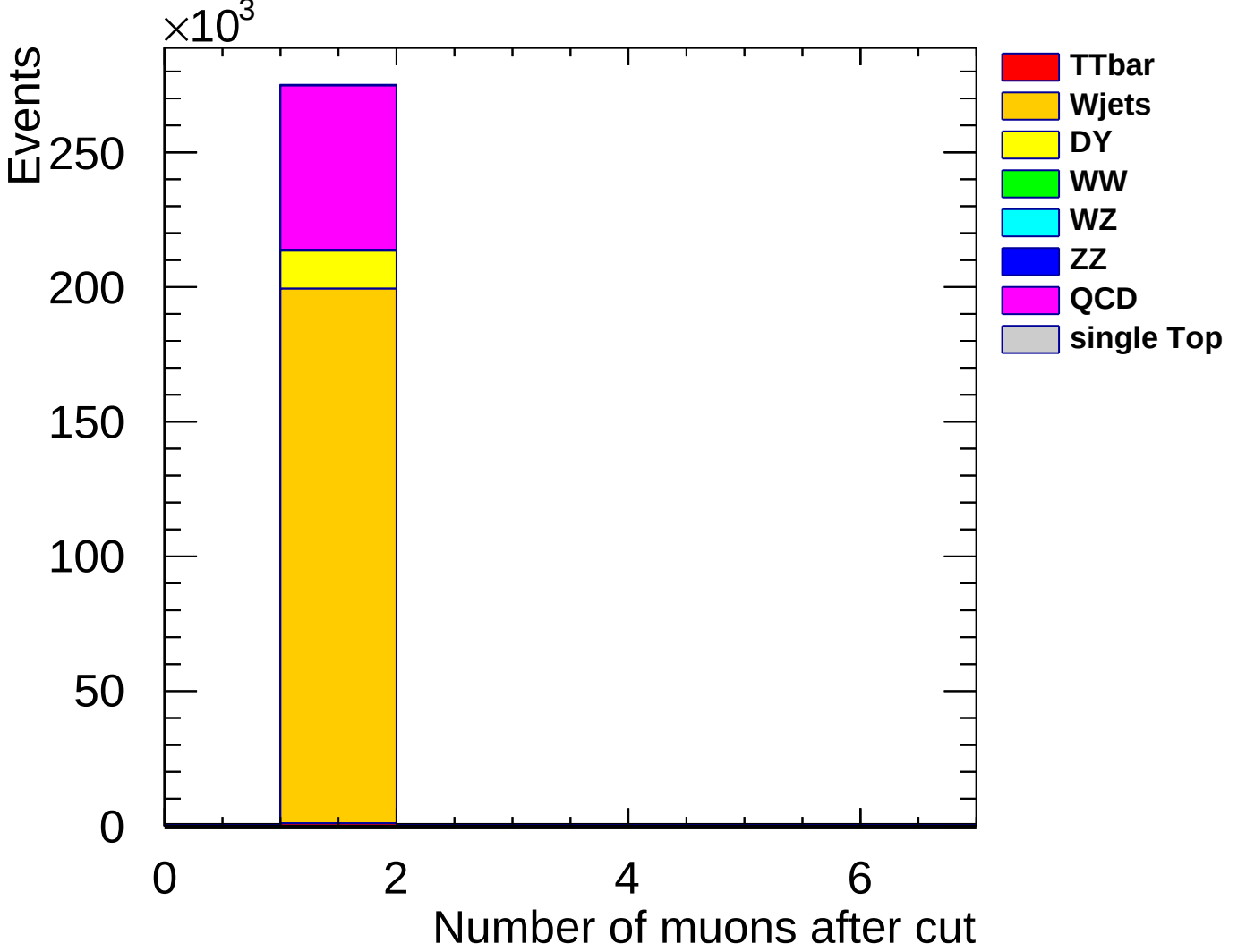
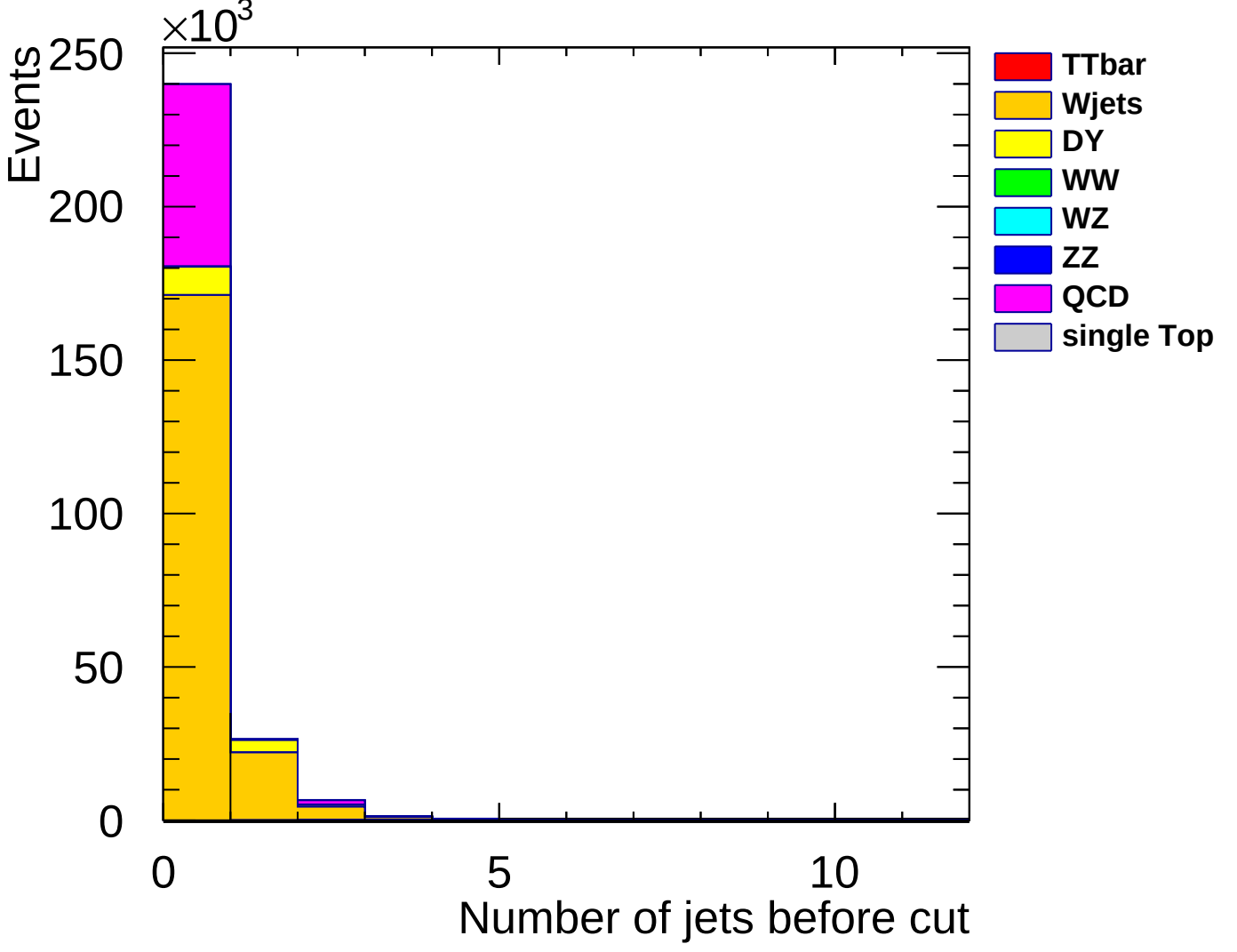
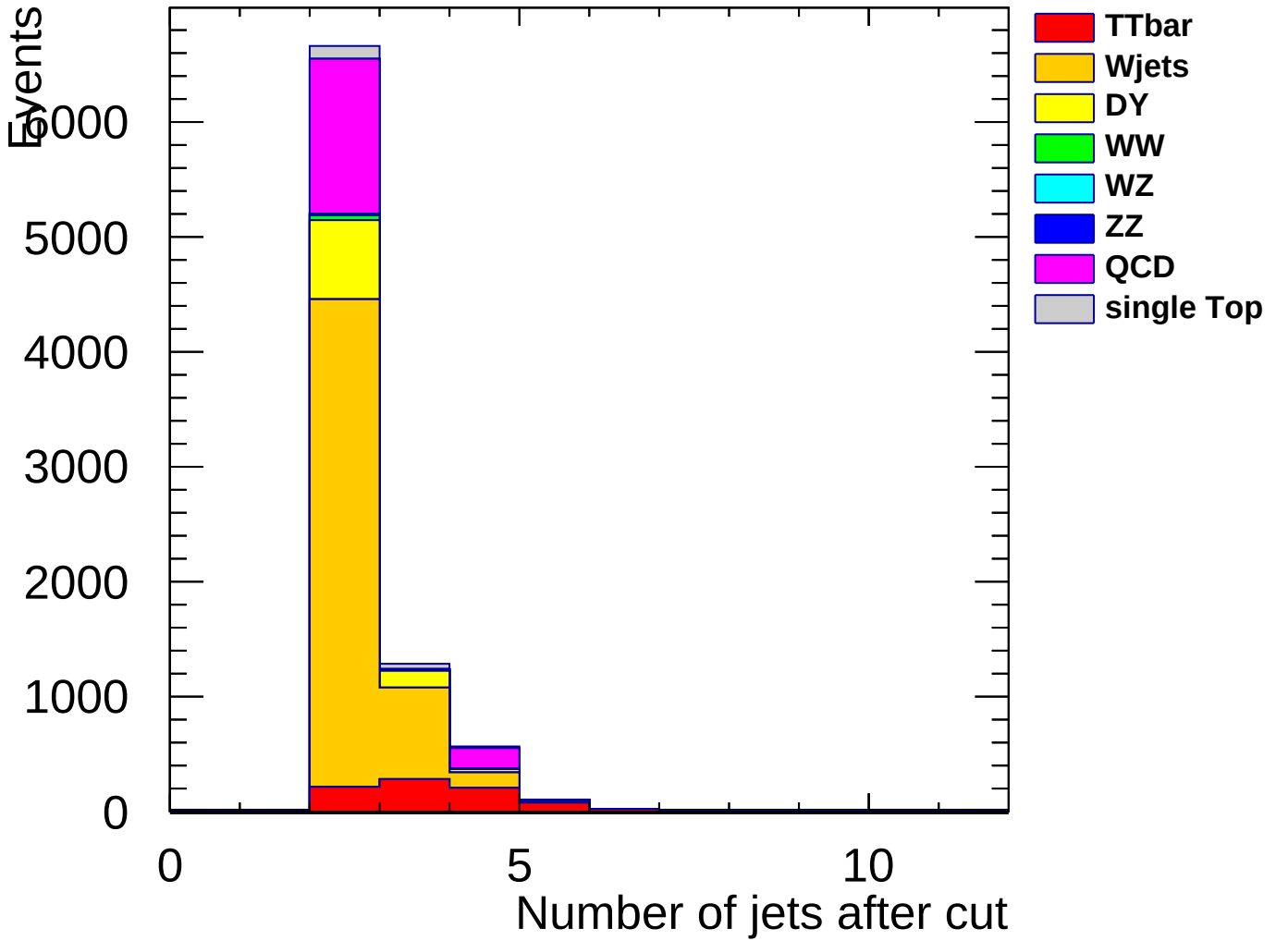

Events
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
60
80
100
120
Invariant di-muon mass
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

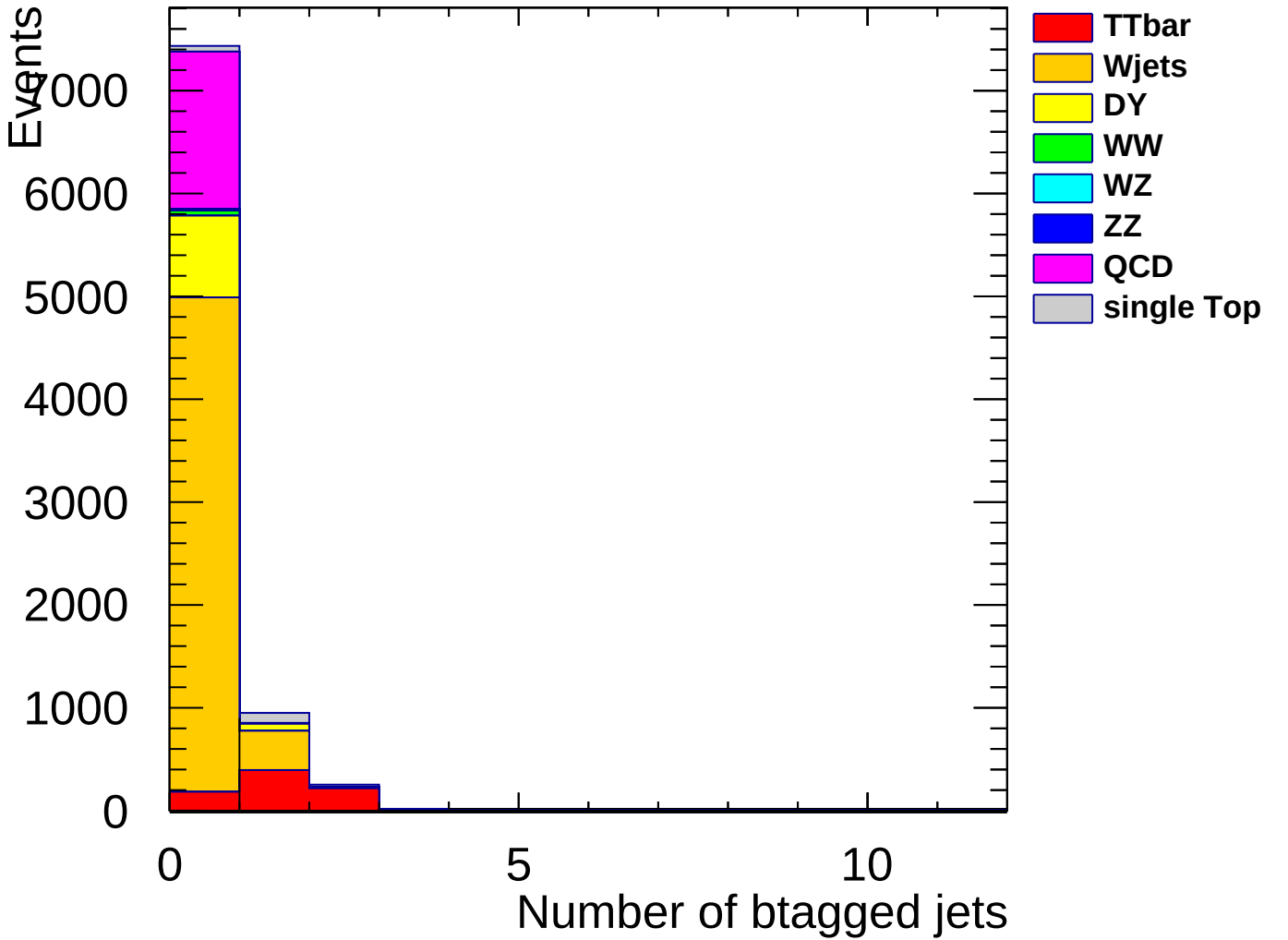

×10^3
Events
250
200
150
100
50
0
0
2
4
6
Number of muons
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

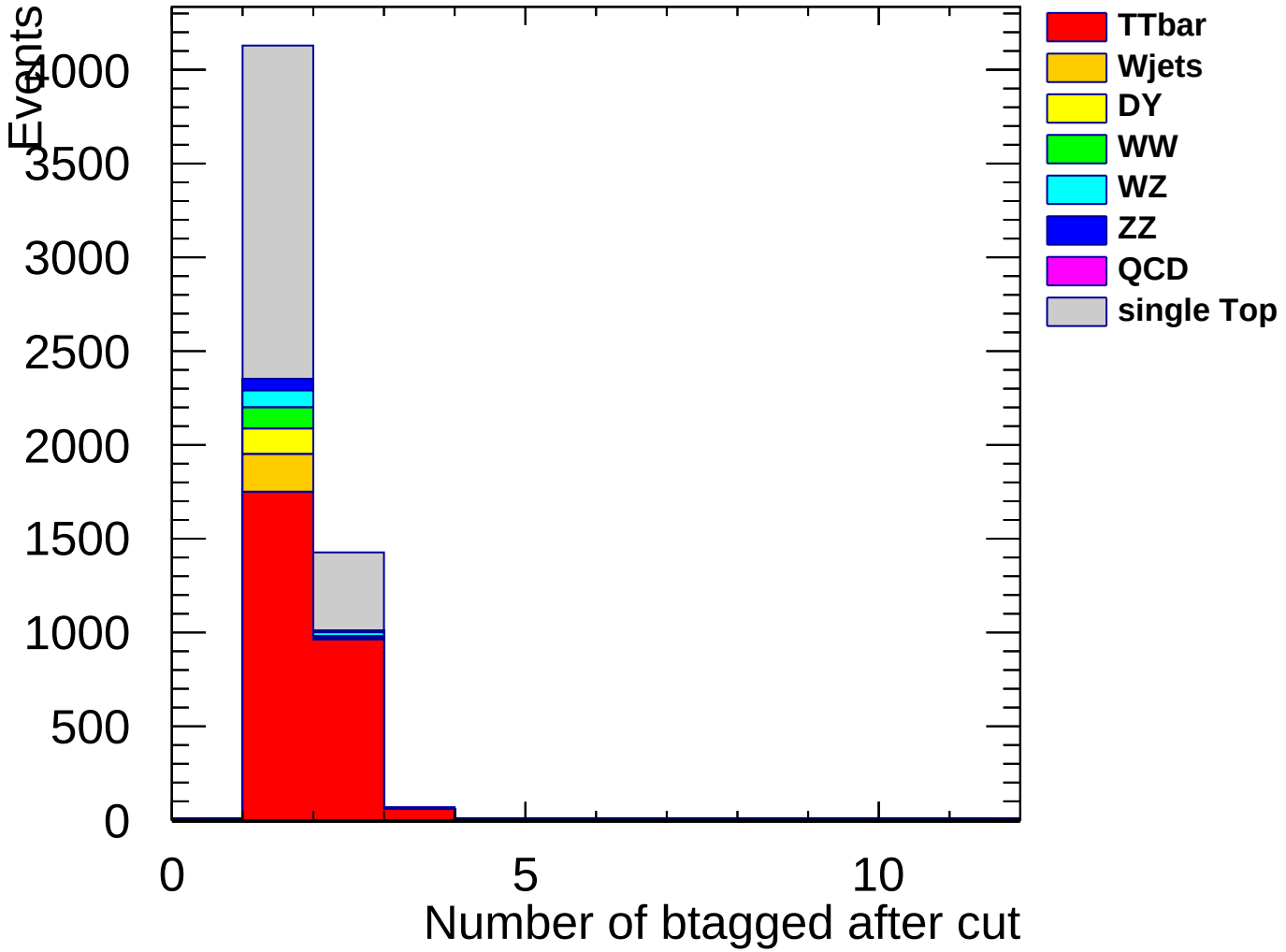

×10^3
Events
250
200
150
100
50
0
0
2
4
6
Number of muons before cut
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

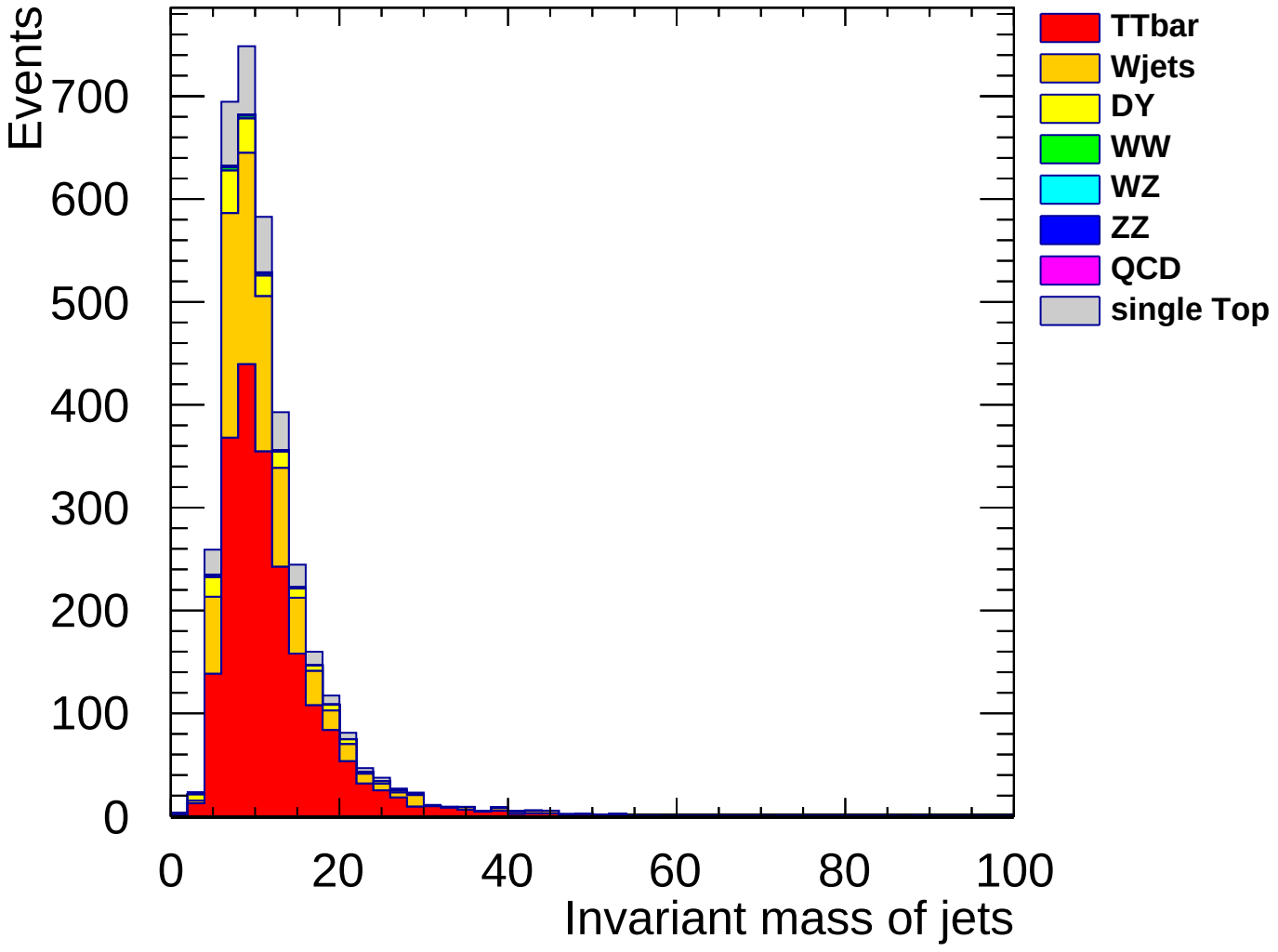

×10^3
Events
250
200
150
100
50
0
0
2
4
6
Number of muons after cut
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

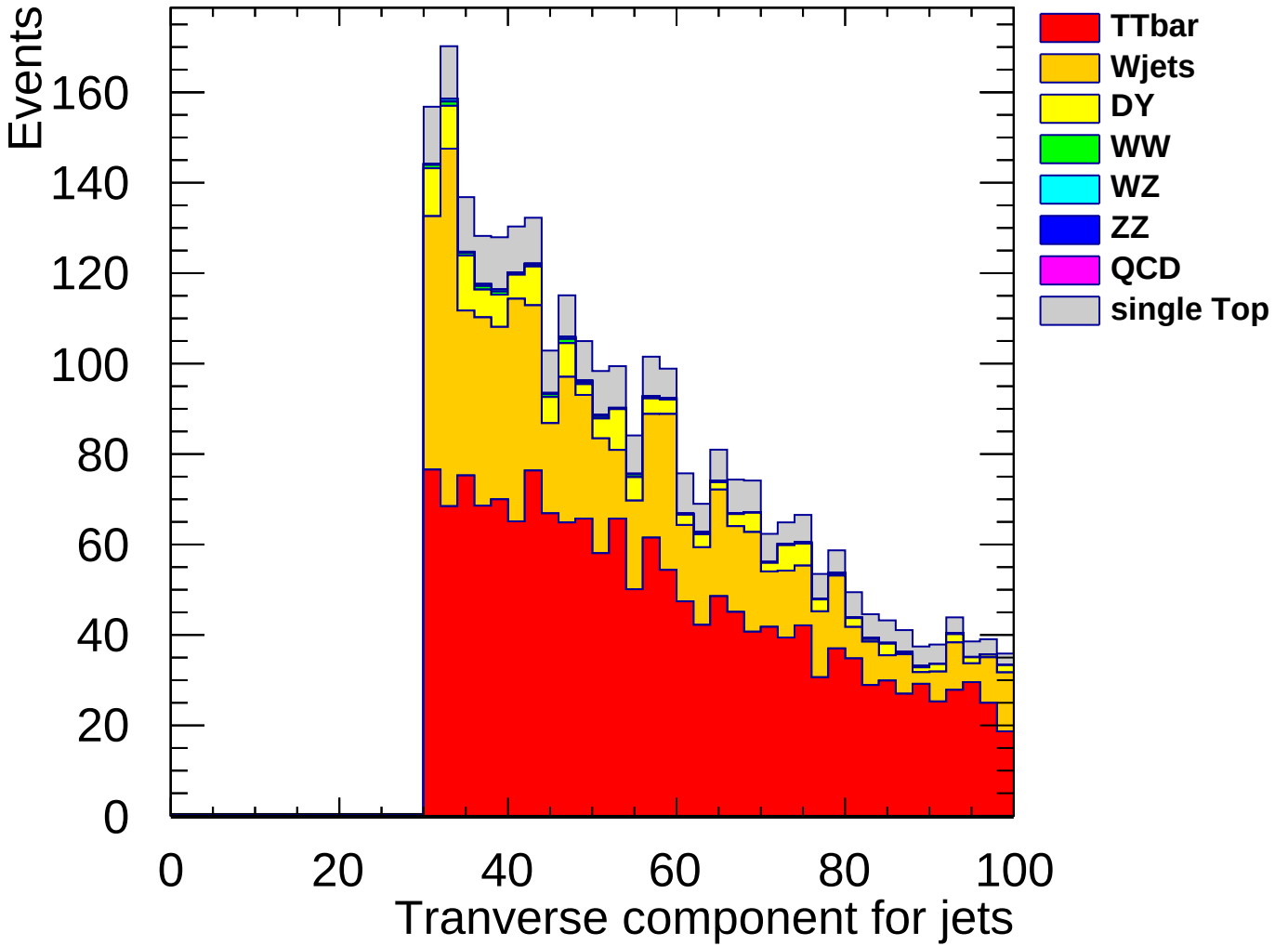

×10^3
Events
250
200
150
100
50
0
0
5
10
Number of jets before cut
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

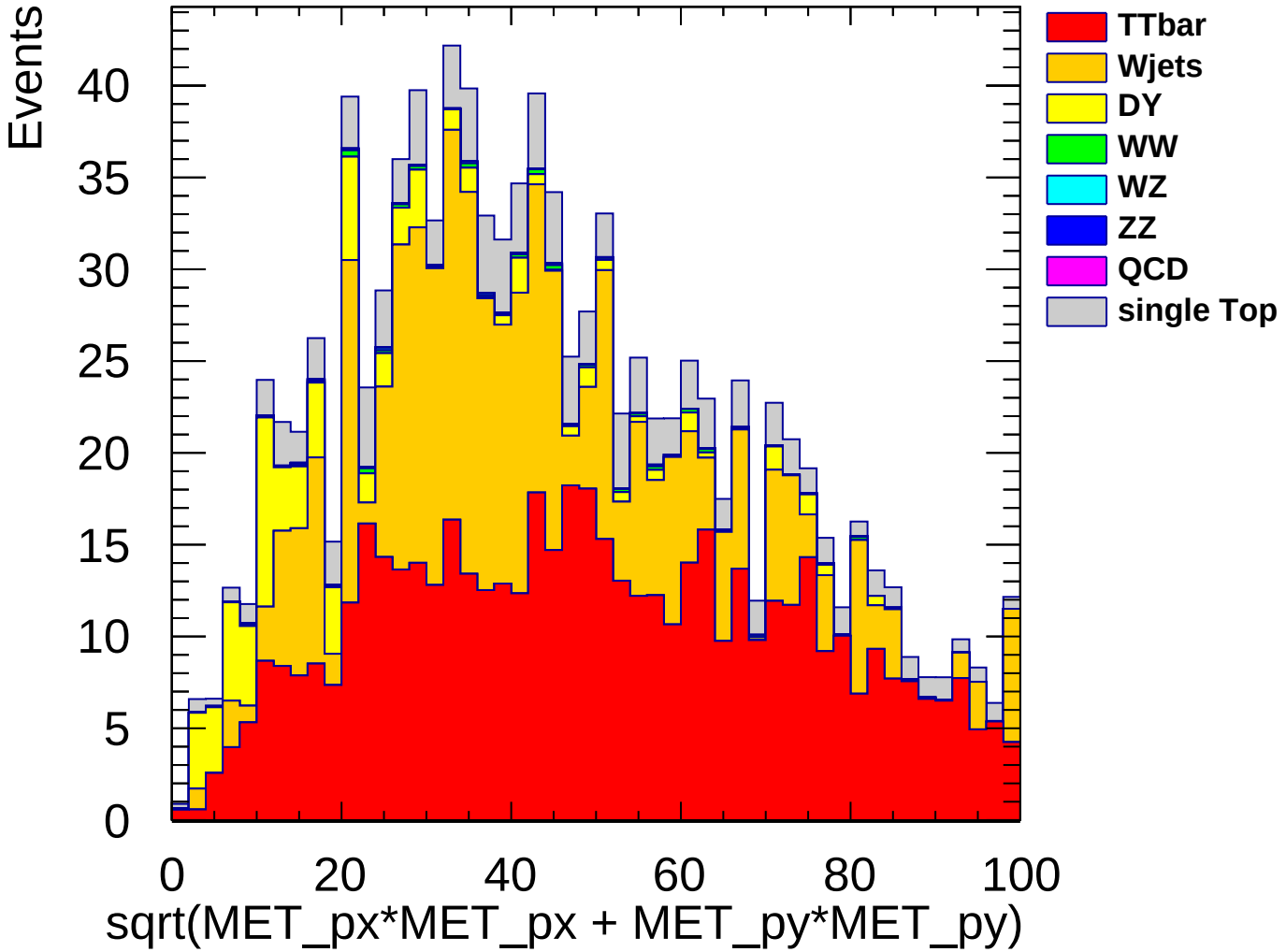

Events
6000
5000
4000
3000
2000
1000
0
0
5
10
Number of jets after cut
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

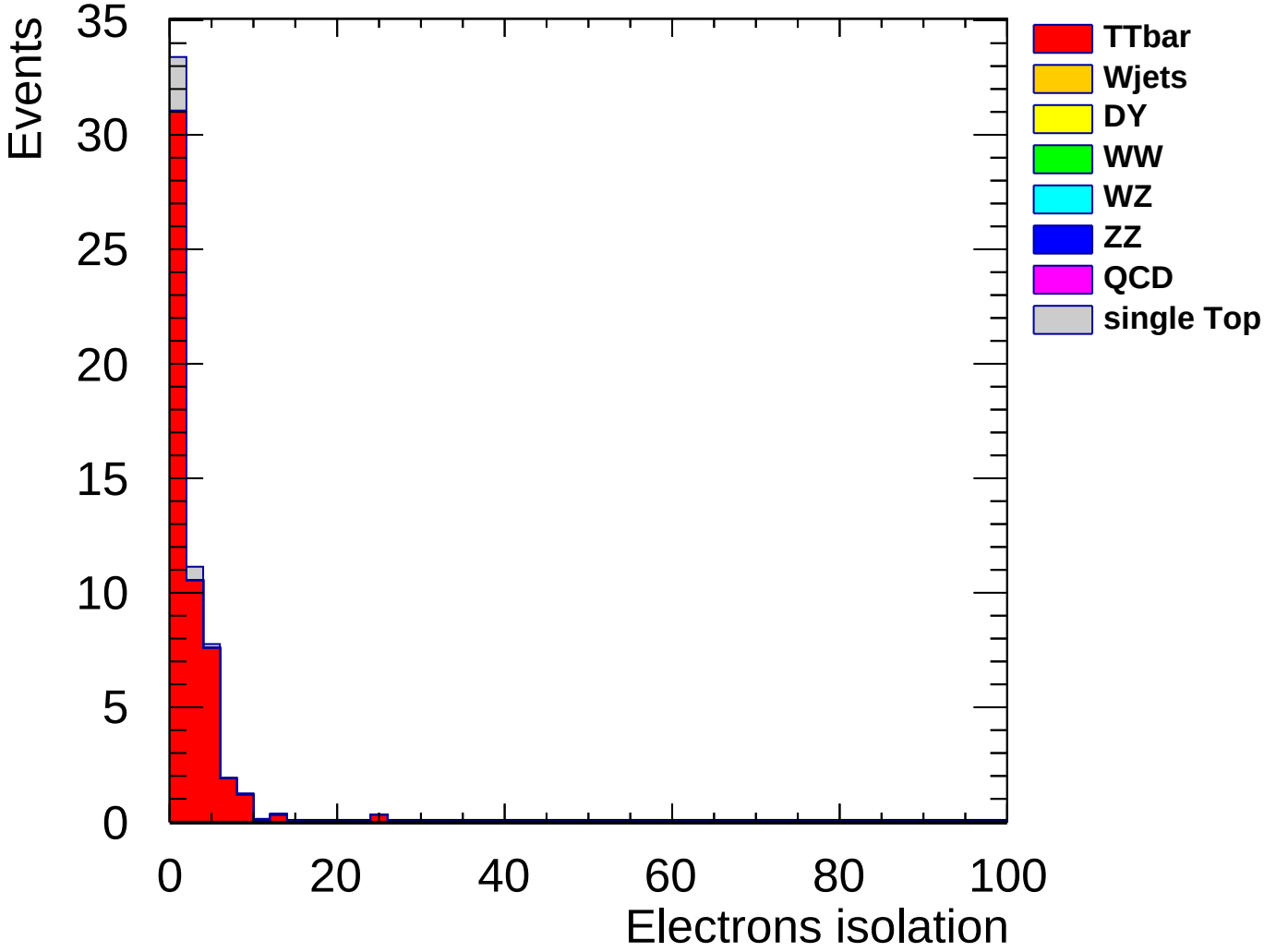

Events
7000
6000
5000
4000
3000
2000
1000
0
0
5
10
Number of btagged jets
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

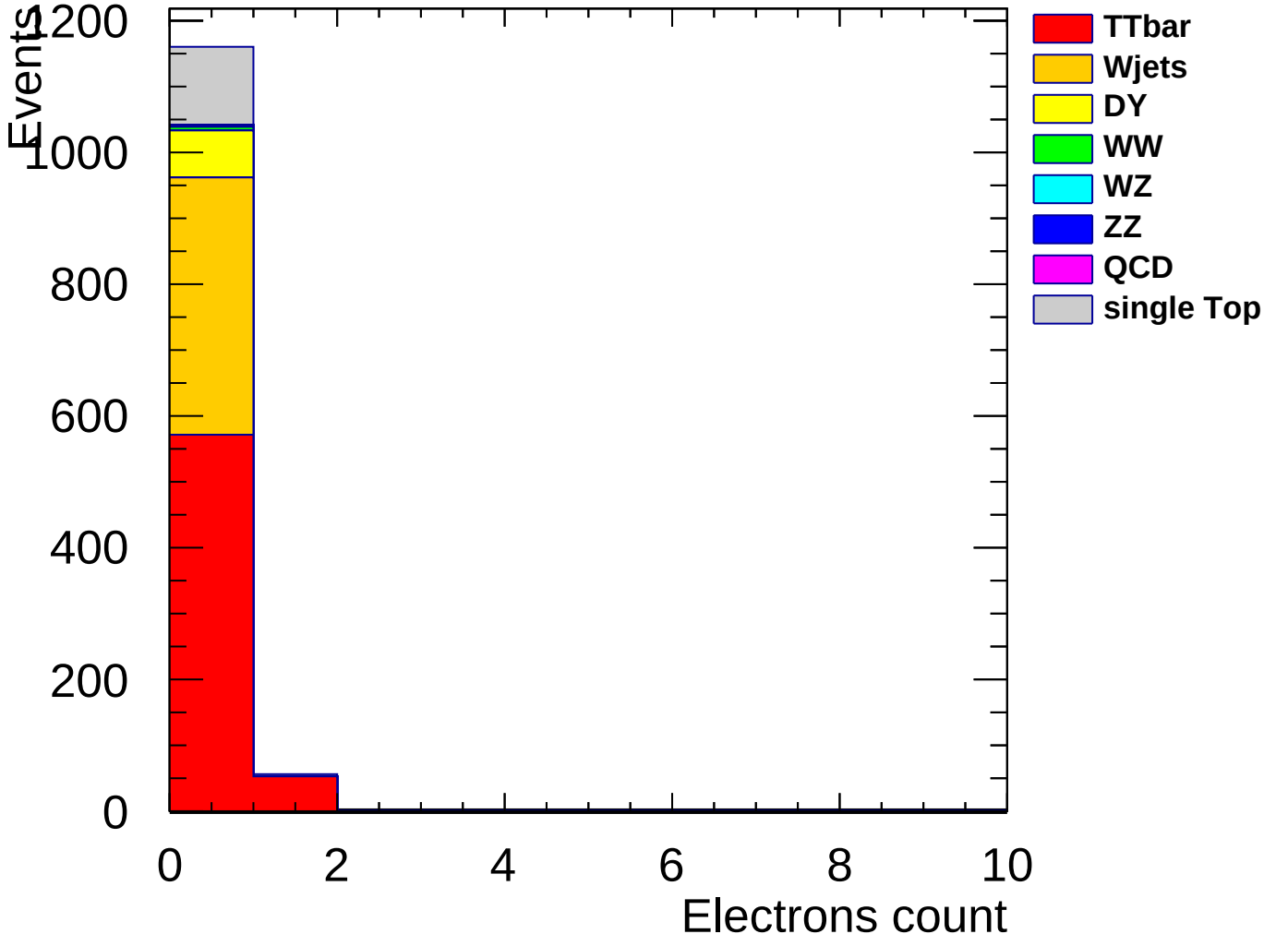

Events
4000
3500
3000
2500
2000
1500
1000
500
0
0
5
10
Number of btagged after cut
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

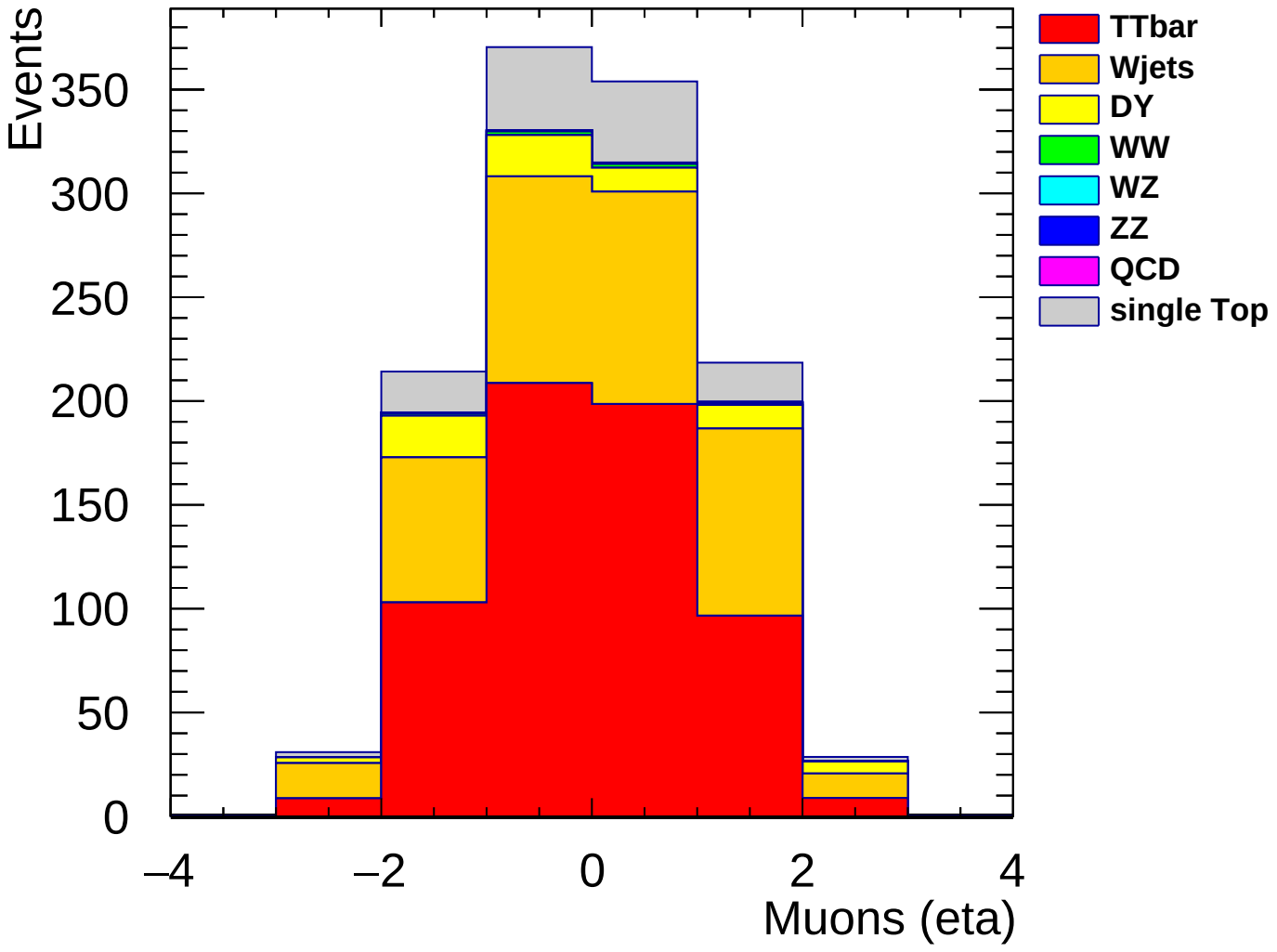

Events
700
600
500
400
300
200
100
0
0
20
40
60
80
100
Invariant mass of jets
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

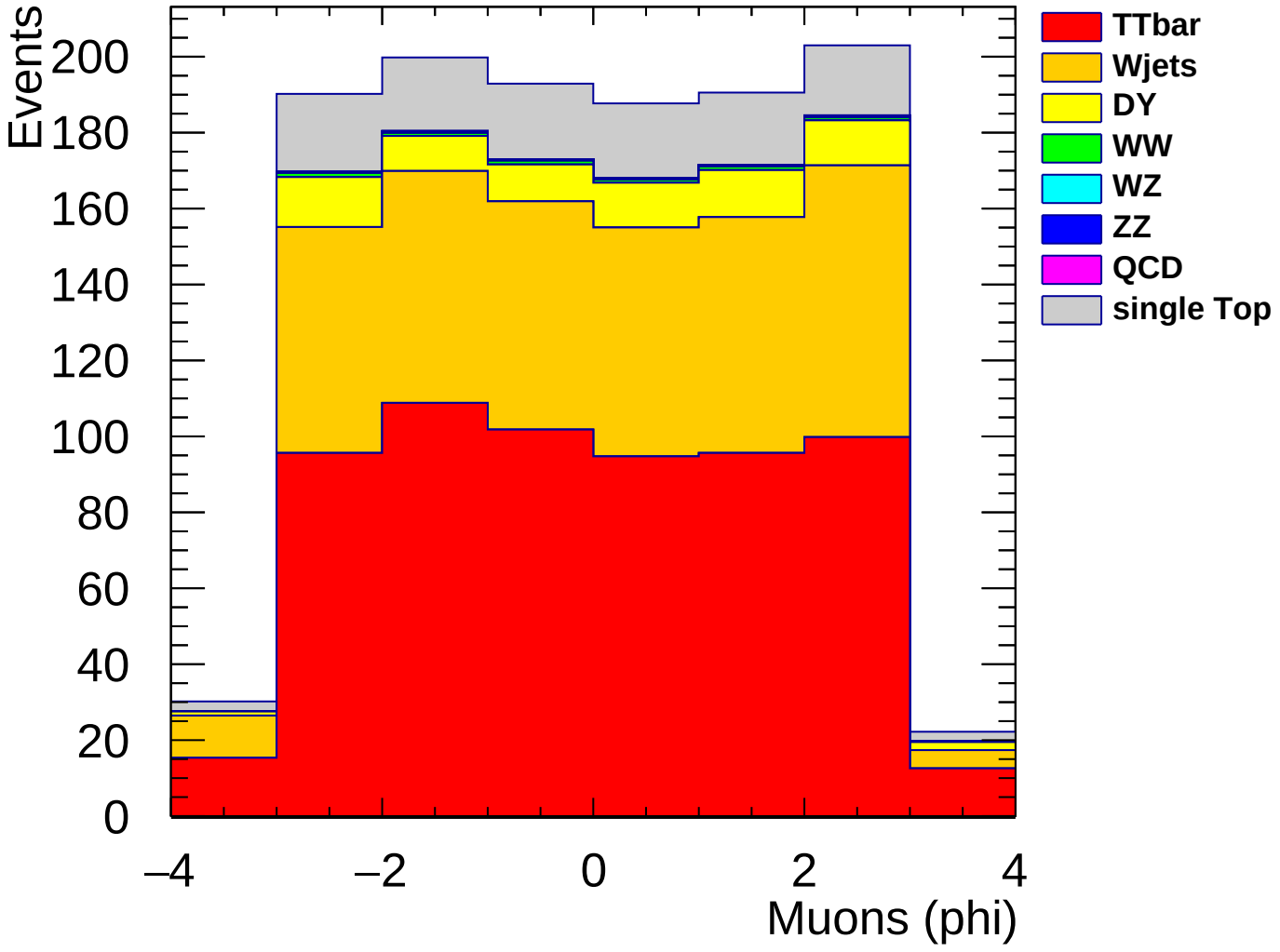

Events
0
20
40
60
80
100
120
140
160
0
20
40
60
80
100
Tranverse component for jets
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

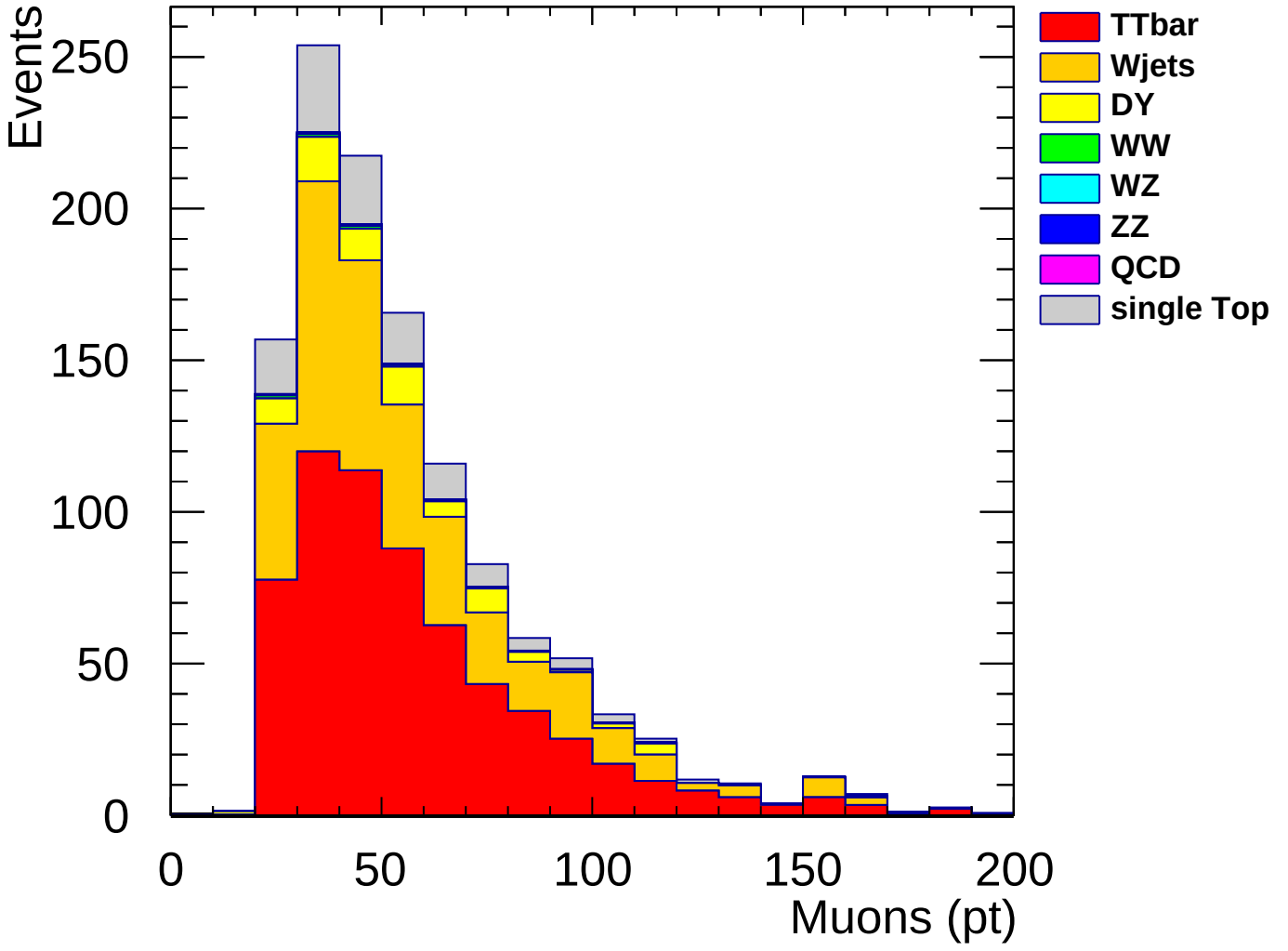

Events
0
5
10
15
20
25
30
35
40
0
20
40
60
80
100
sqrt(MET_px*MET_px + MET_py*MET_py)
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

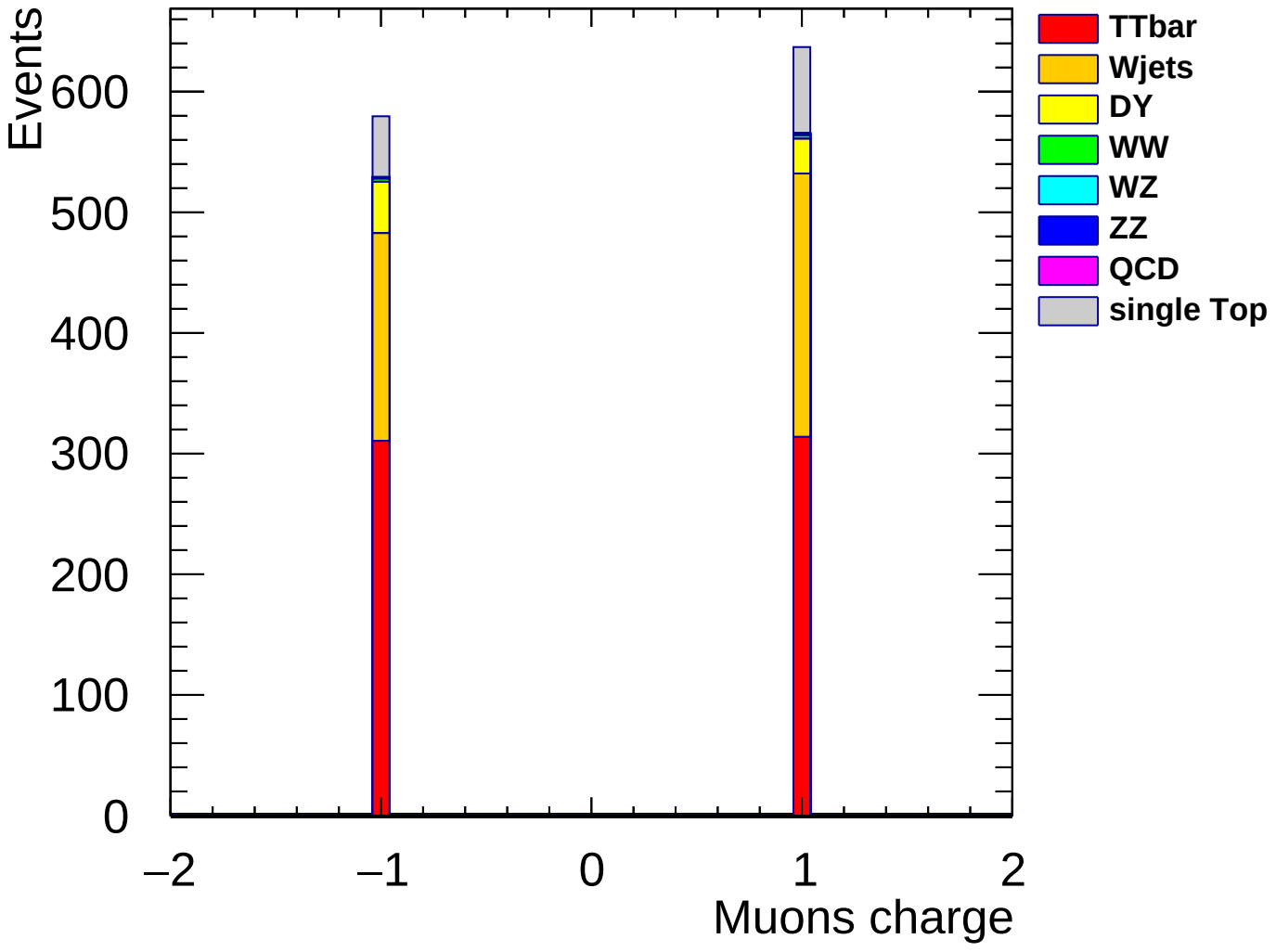

Events
35
30
25
20
15
10
5
0
0
20
40
60
80
100
Electrons isolation
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

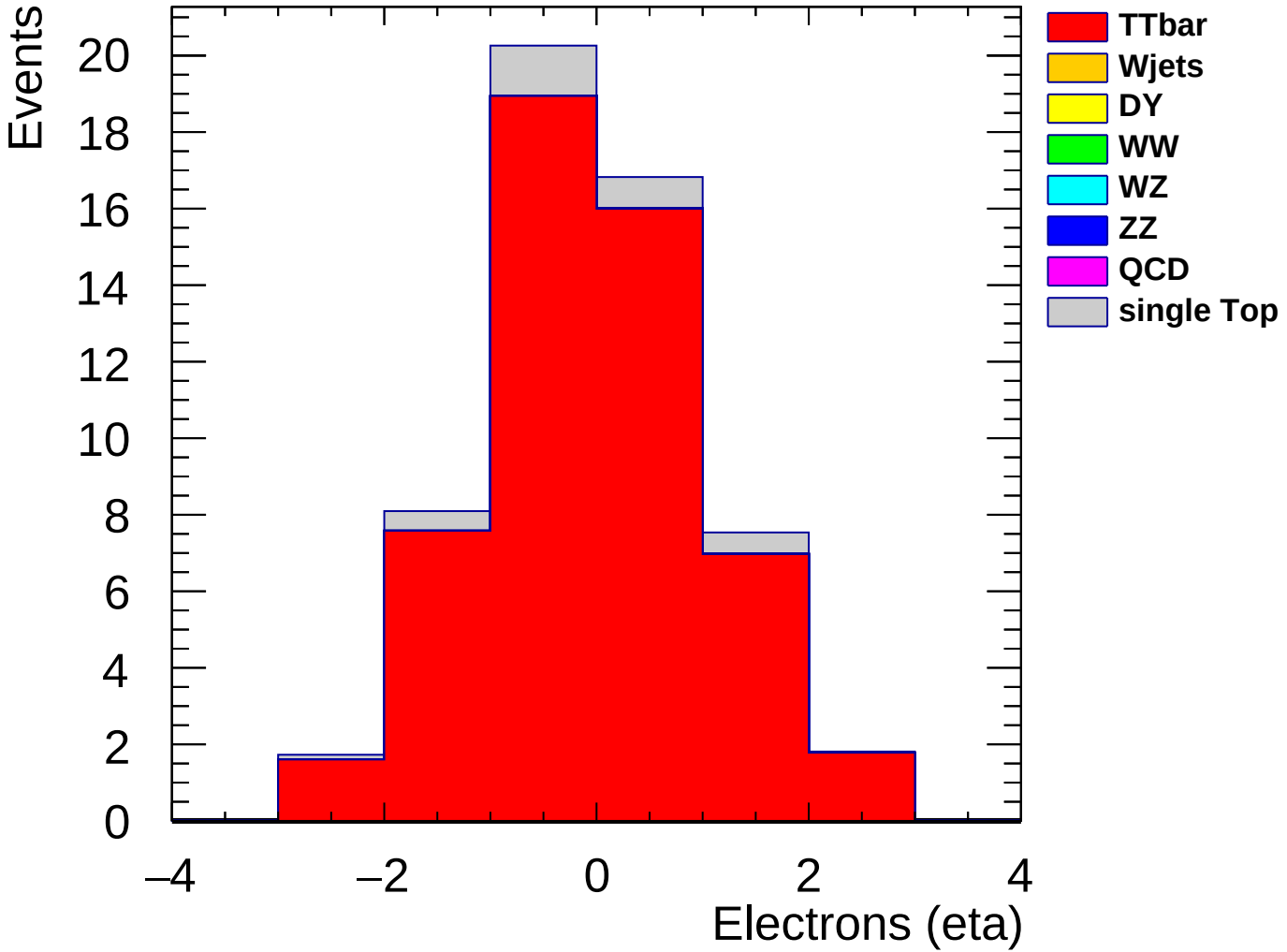

Events
1200
1000
800
600
400
200
0
0
2
4
6
8
10
Electrons count
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

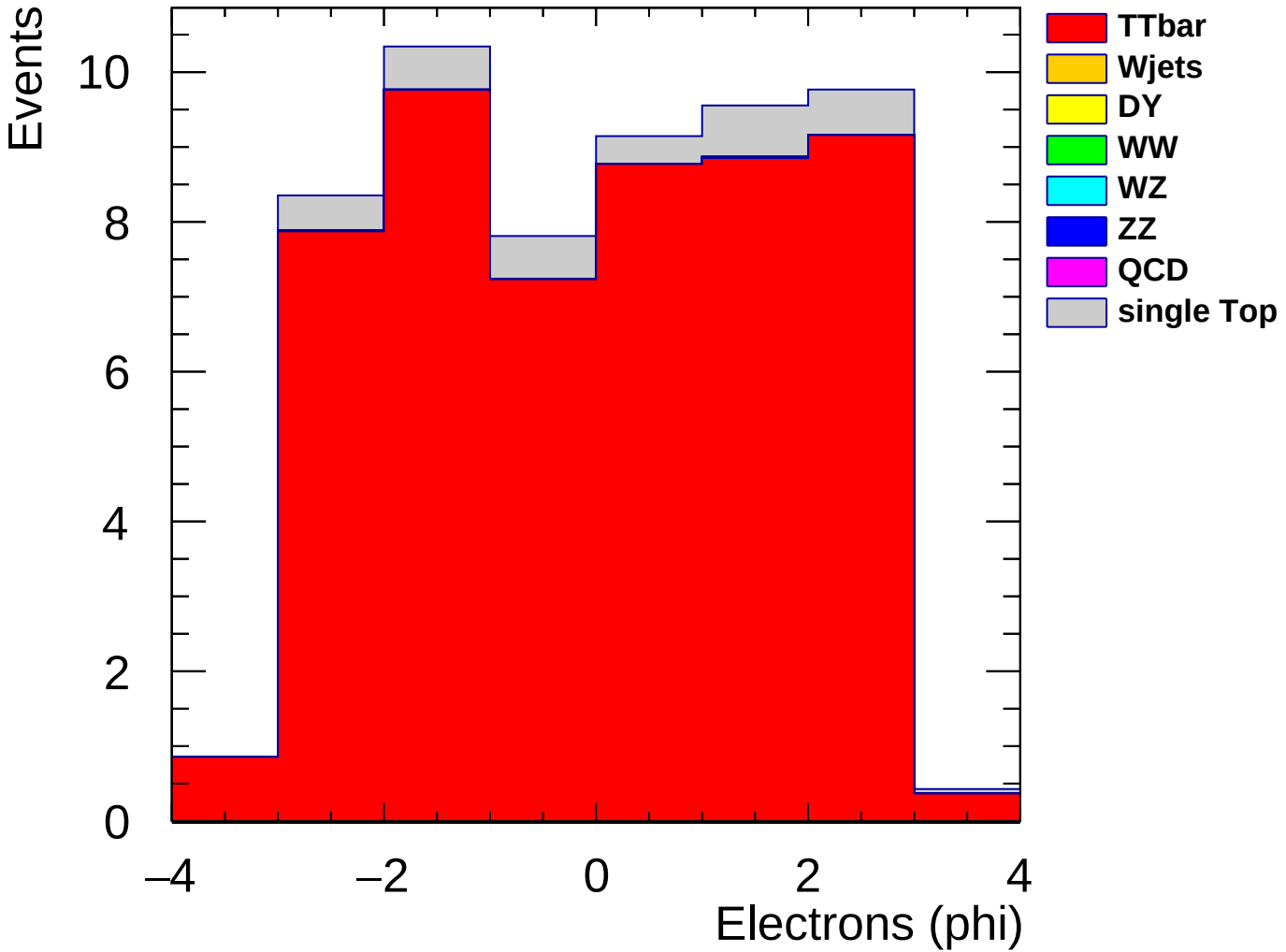

Events
350
300
250
200
150
100
50
0
–4
–2
0
2
4
Muons (eta)
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

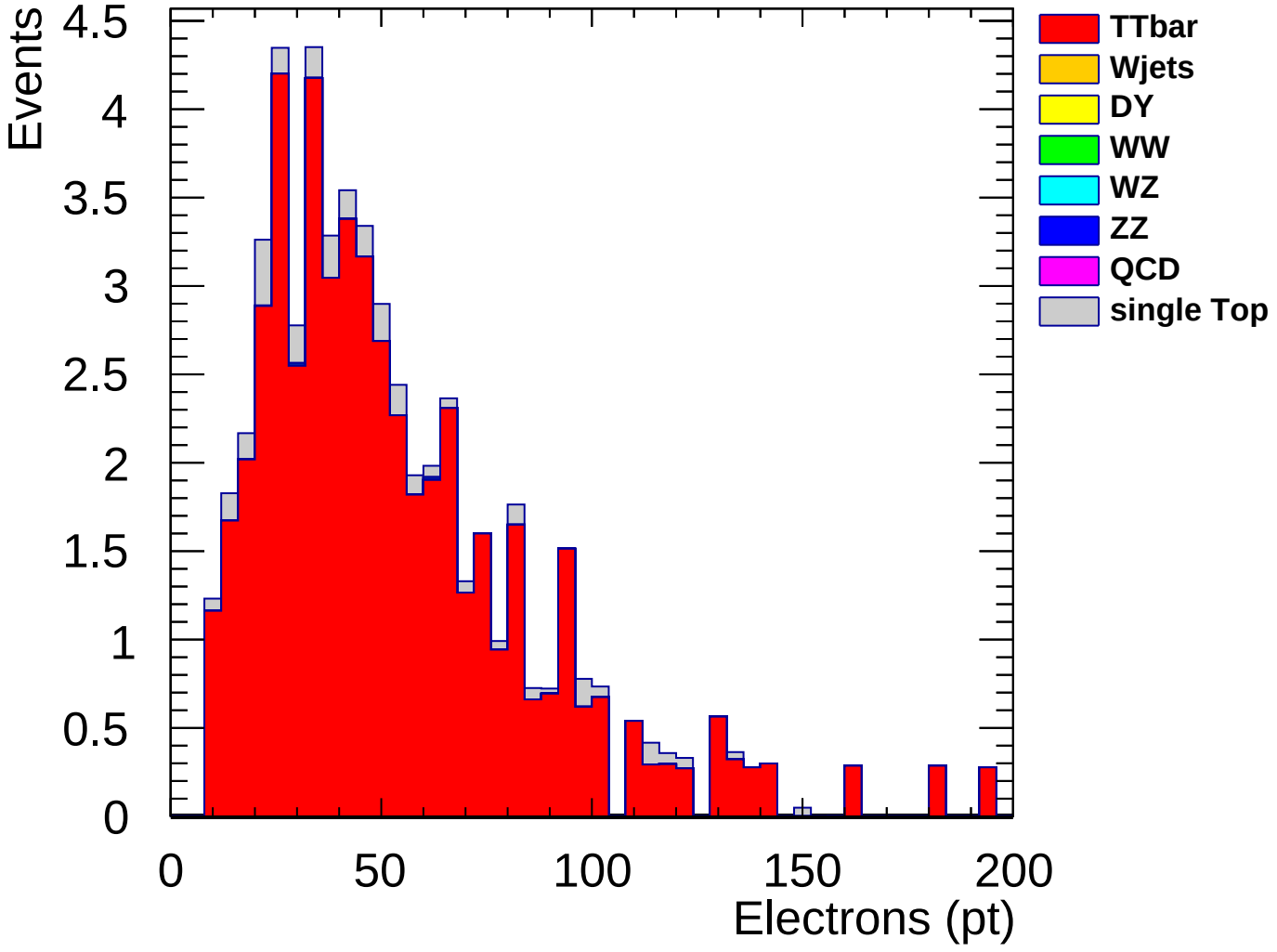

Events
200
180
160
140
120
100
80
60
40
20
0
–4
–2
0
2
4
Muons (phi)
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

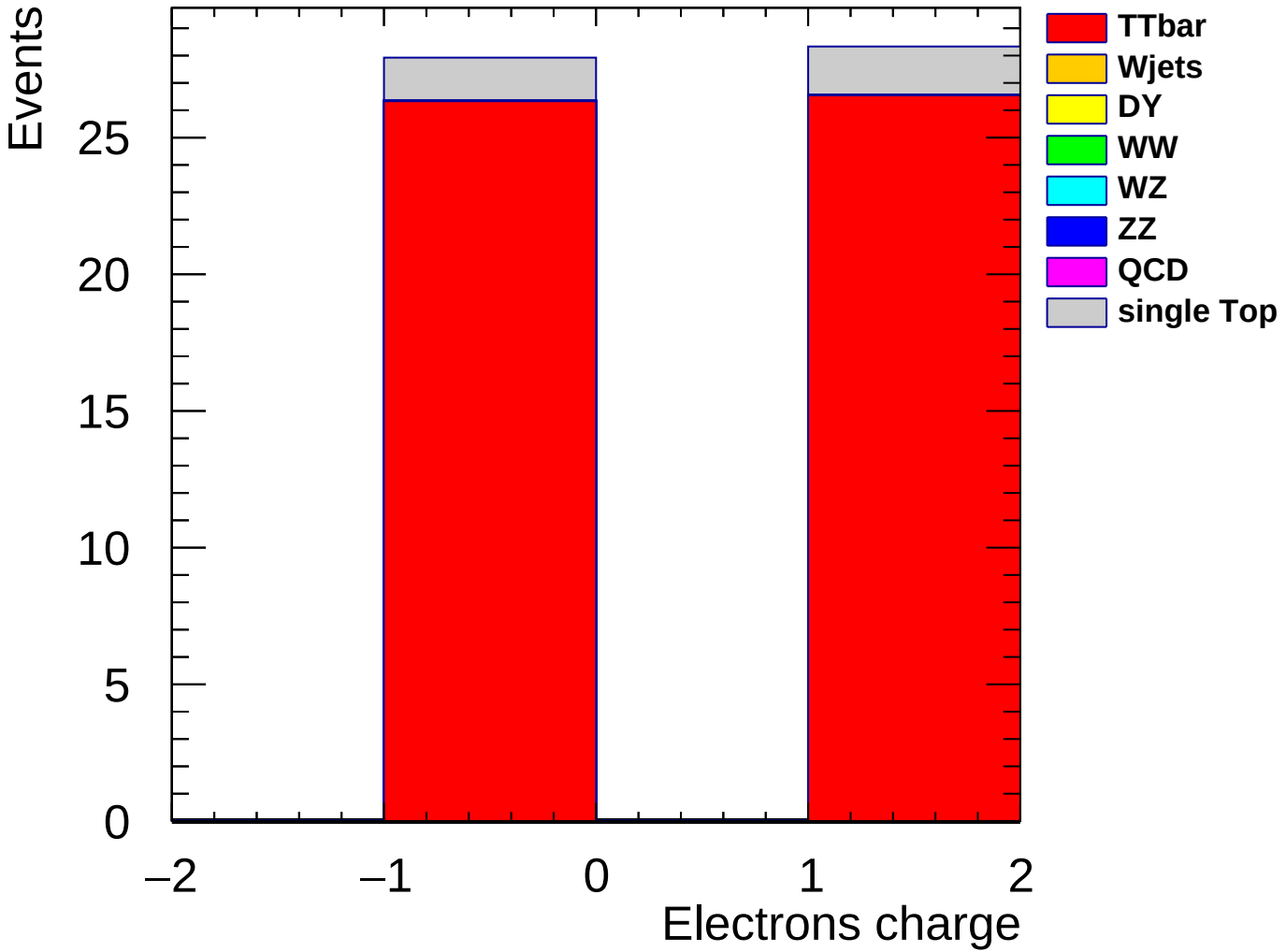

Events
250
200
150
100
50
0
0
50
100
150
200
Muons (pt)
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

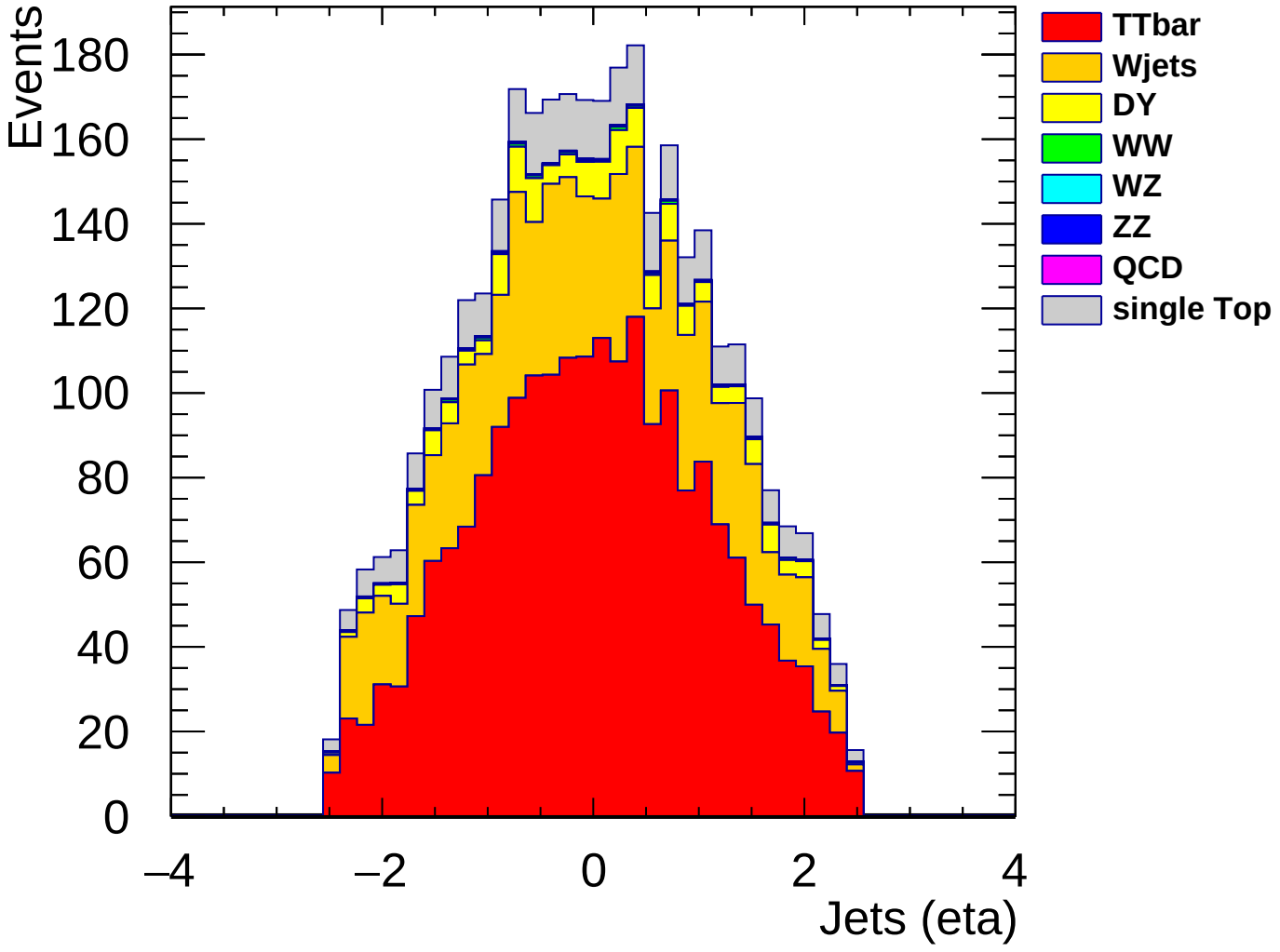

Events
600
500
400
300
200
100
0
–2
–1
0
1
2
Muons charge
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

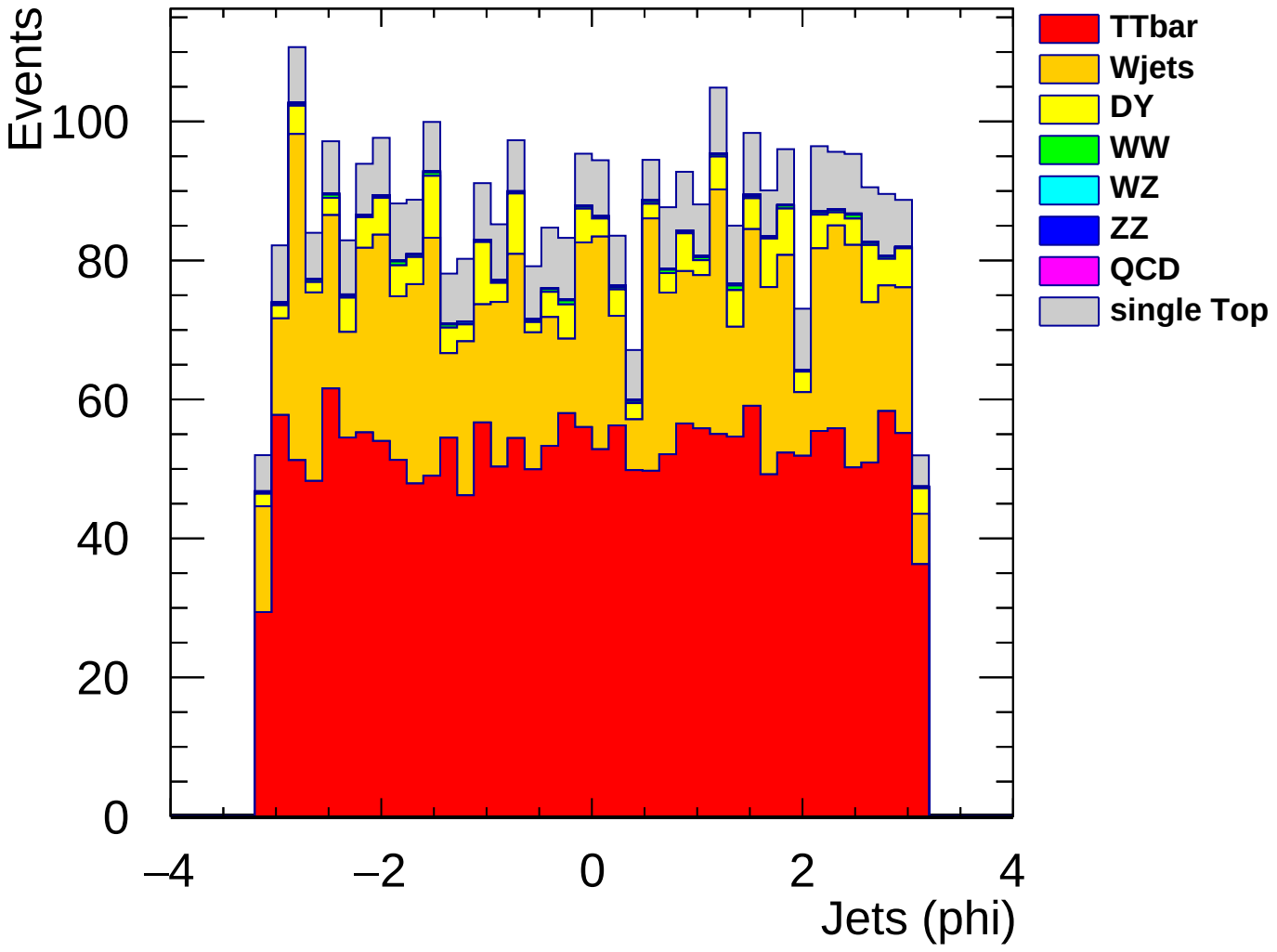

Events
20
18
16
14
12
10
8
6
4
2
0
–4
–2
0
2
4
Electrons (eta)
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

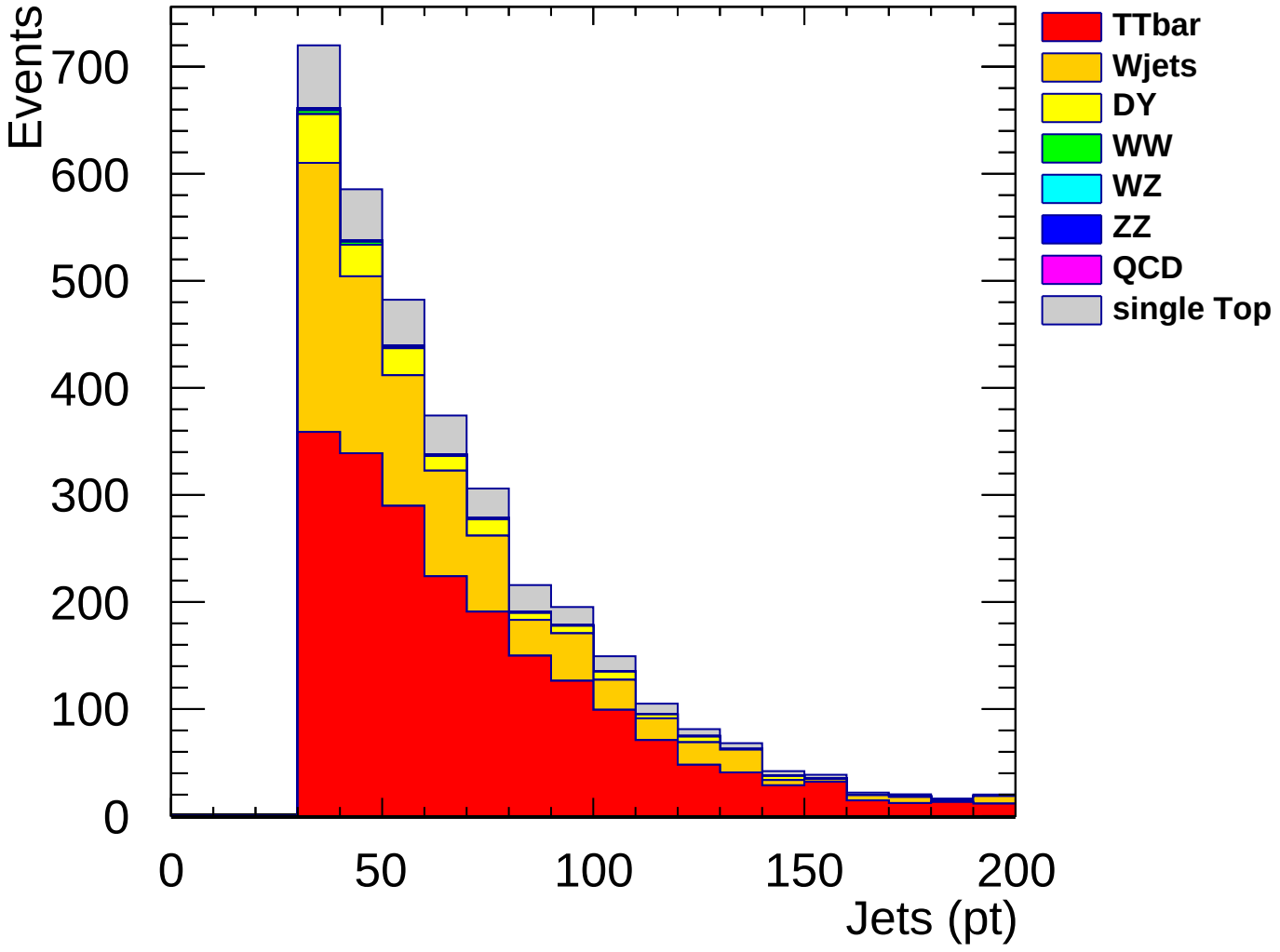

Events
10
8
6
4
2
0
–4
–2
0
2
4
Electrons (phi)
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

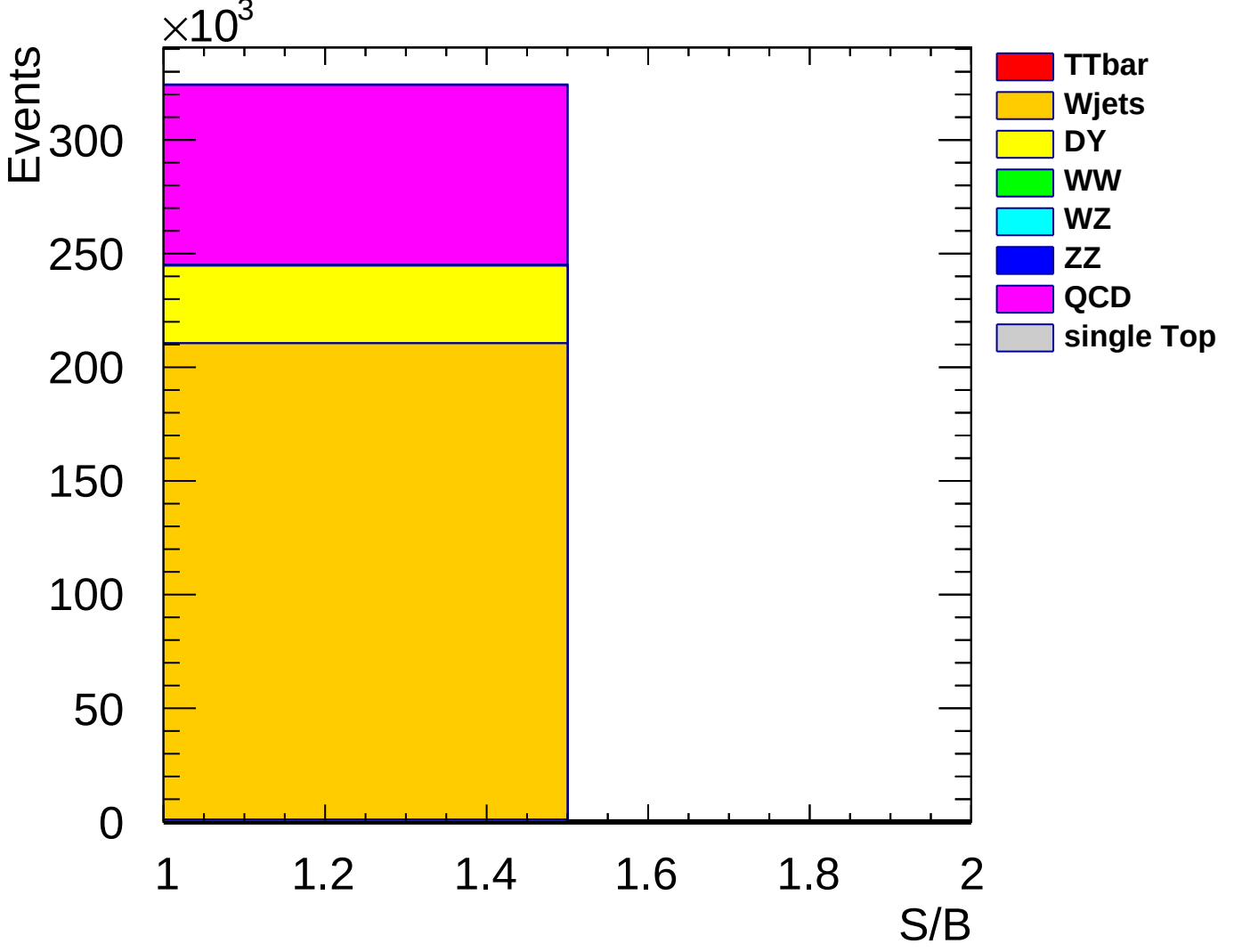

Events
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0
50
100
150
200
Electrons (pt)
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

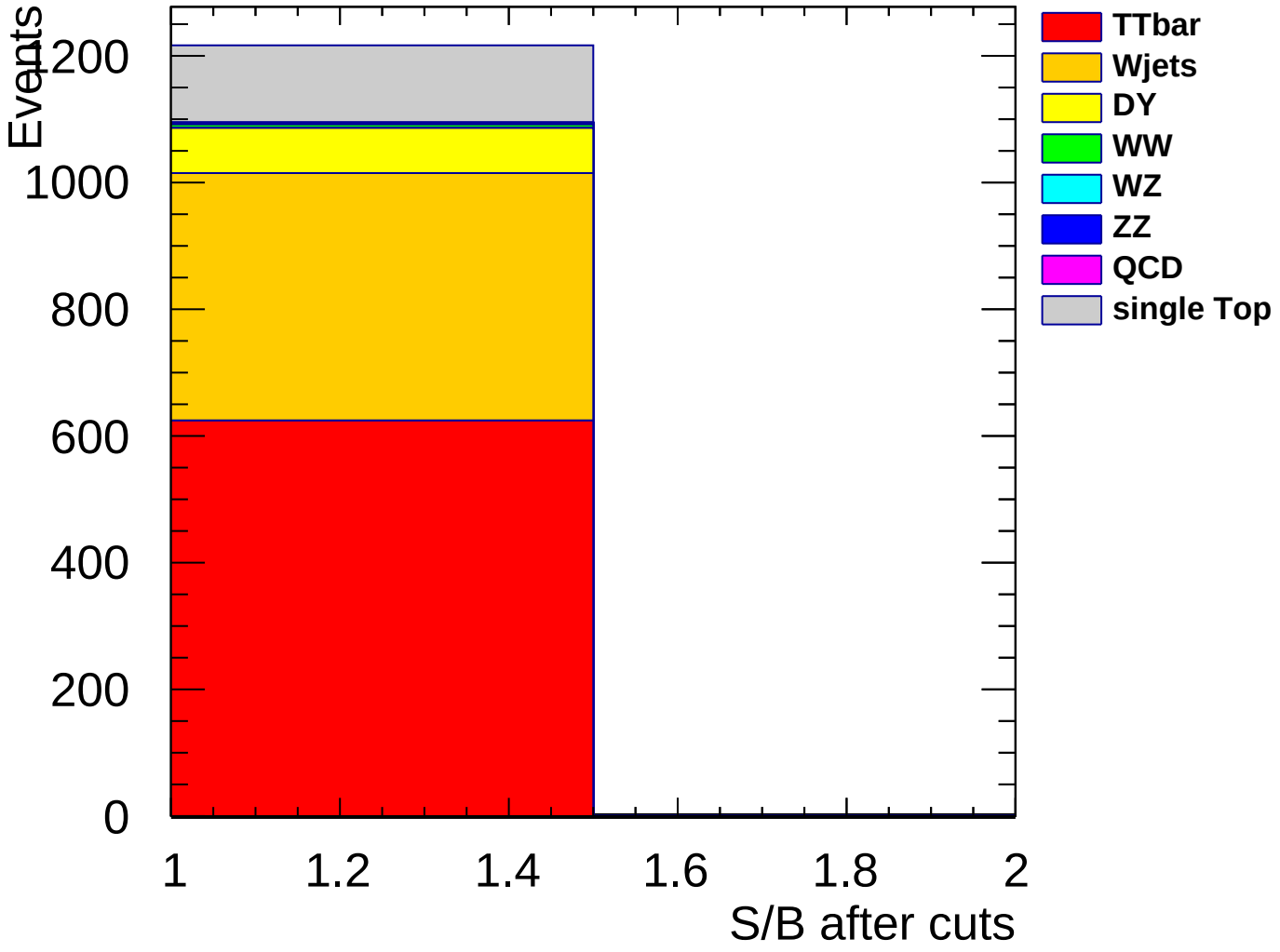

Events
25
20
15
10
5
0
–2
–1
0
1
2
Electrons charge
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

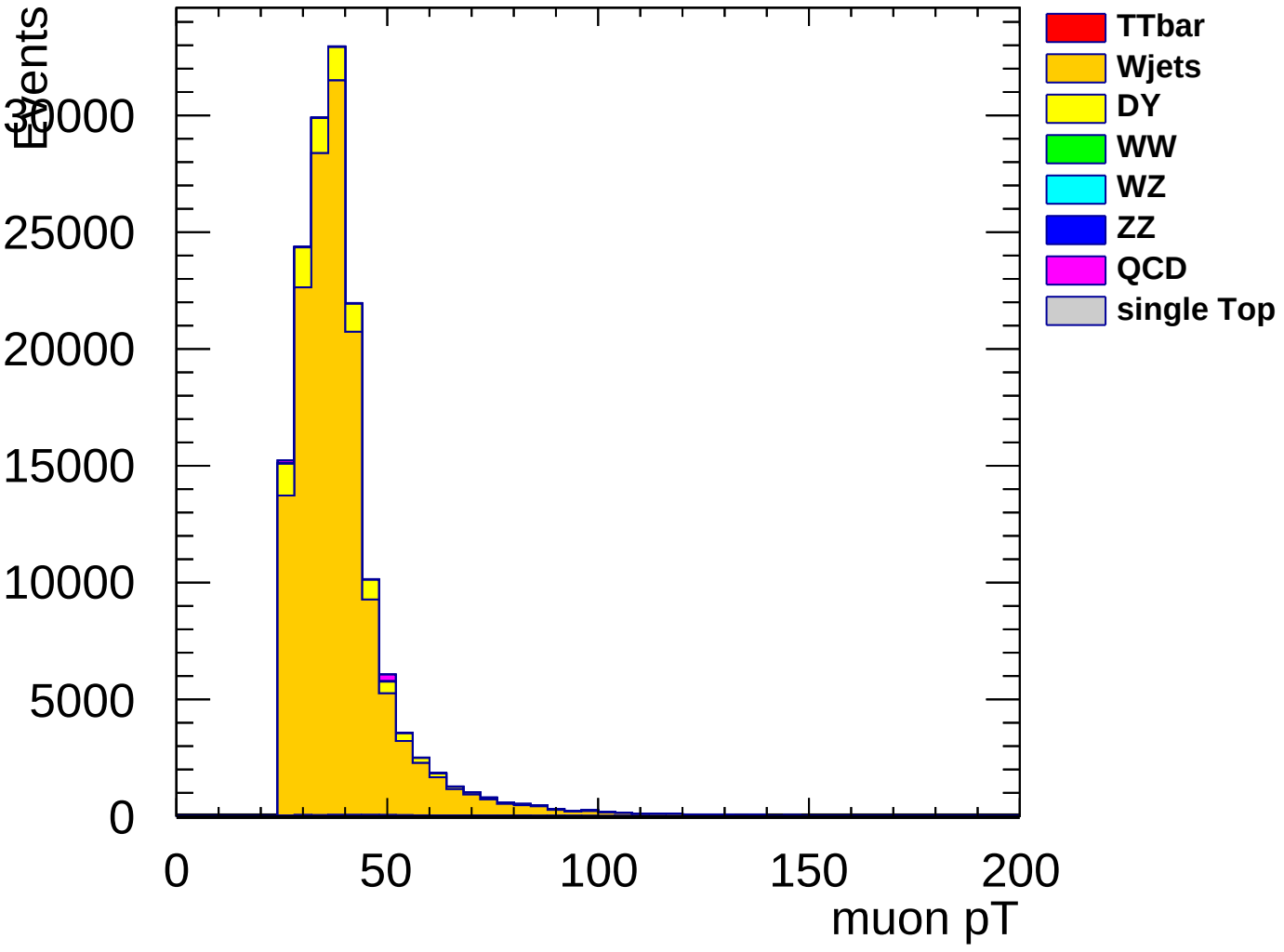

Events
180
160
140
120
100
80
60
40
20
0
–4
–2
0
2
4
Jets (eta)
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

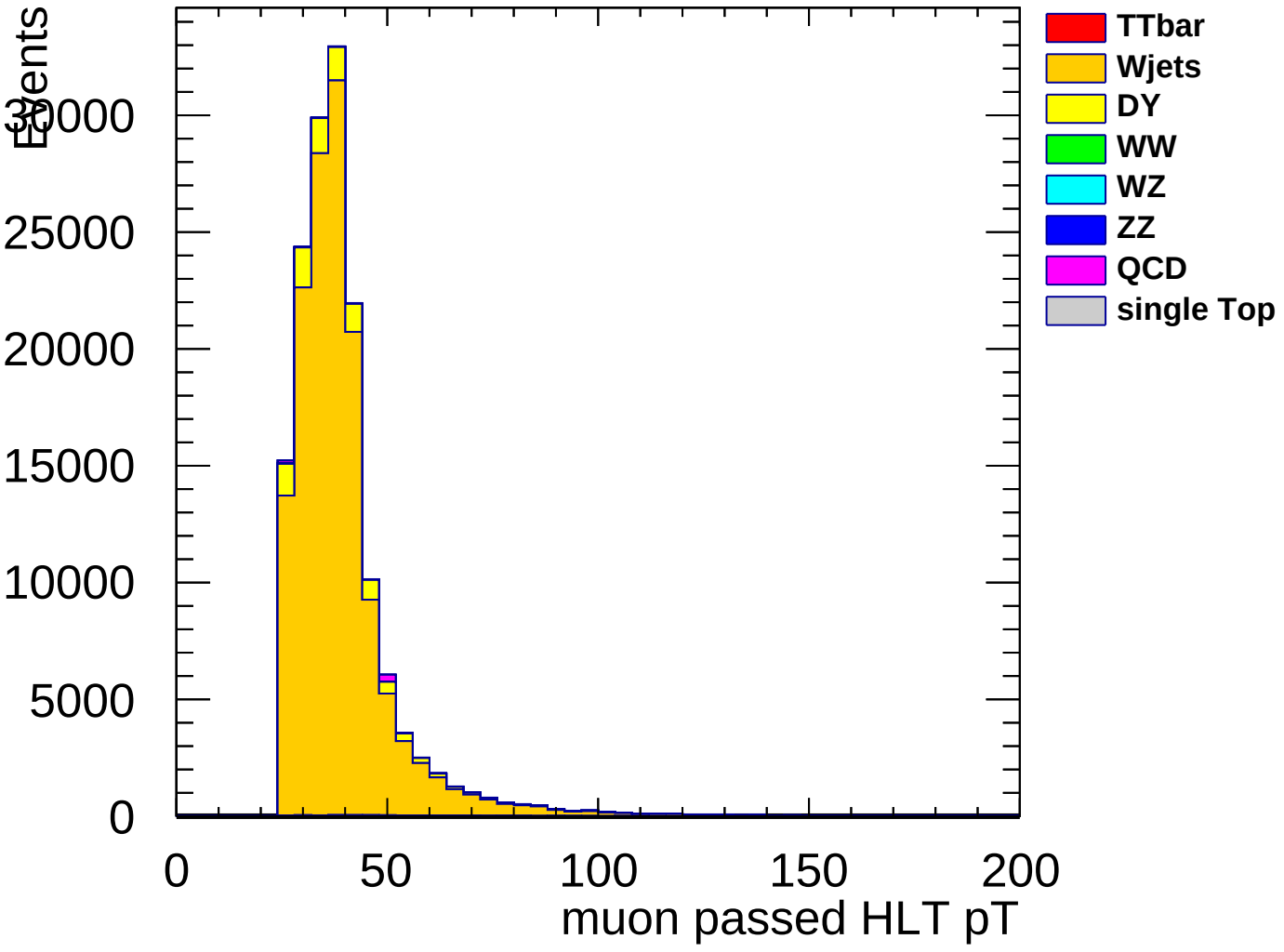

Events
100
80
60
40
20
0
–4
–2
0
2
4
Jets (phi)
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

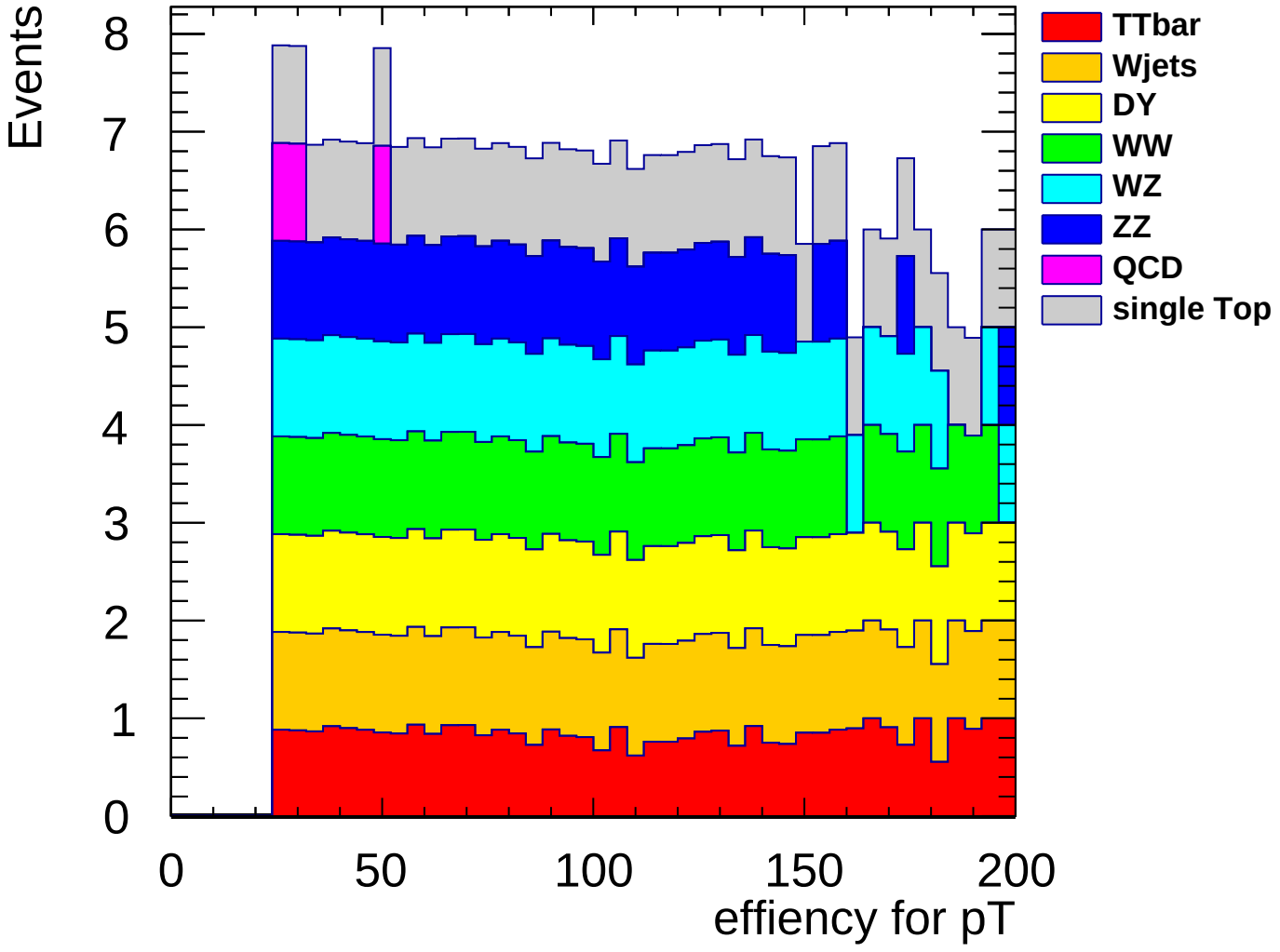

Events
700
600
500
400
300
200
100
0
0
50
100
150
200
Jets (pt)
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

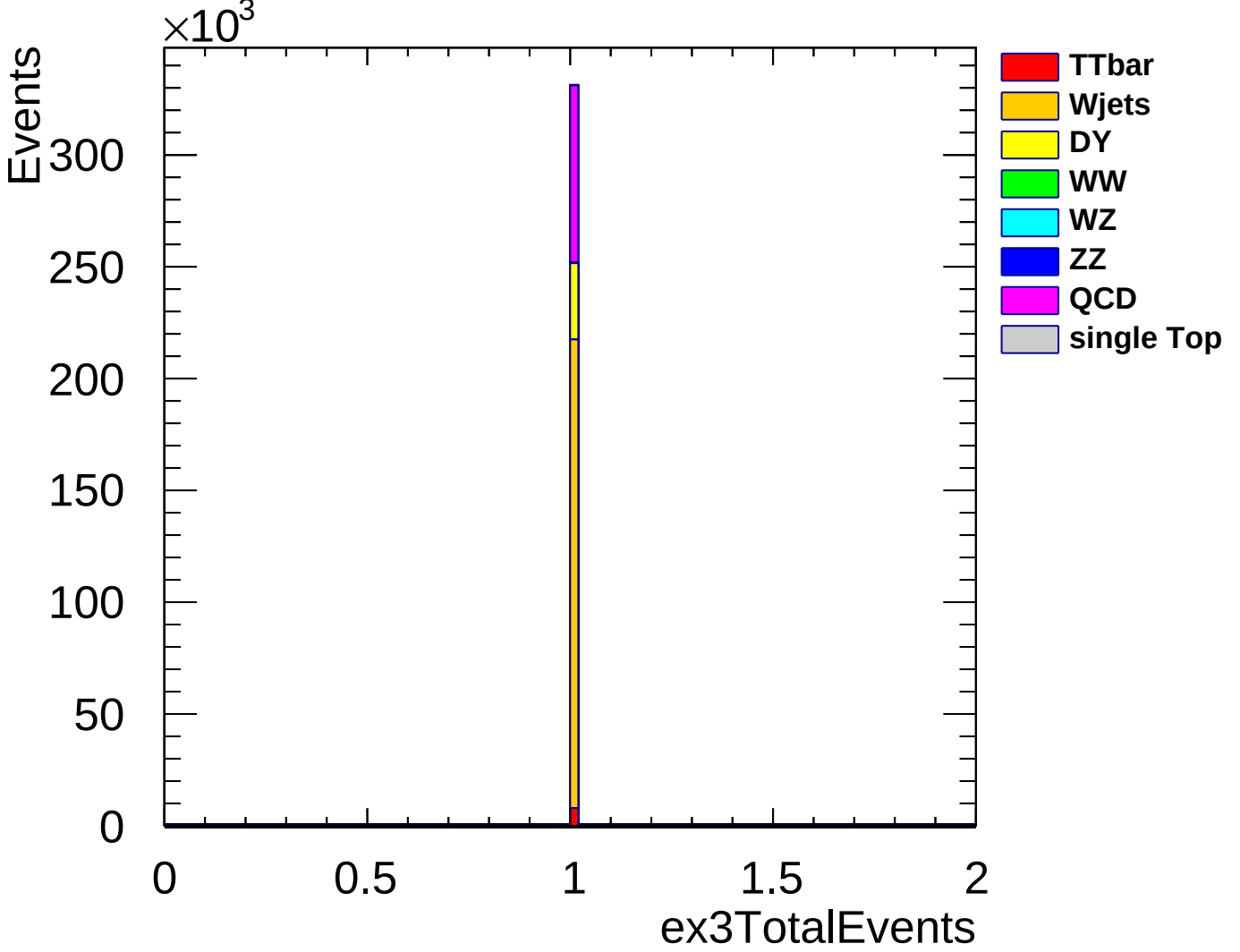

×10^3
Events
300
250
200
150
100
50
0
1
1.2
1.4
1.6
1.8
2
S/B
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

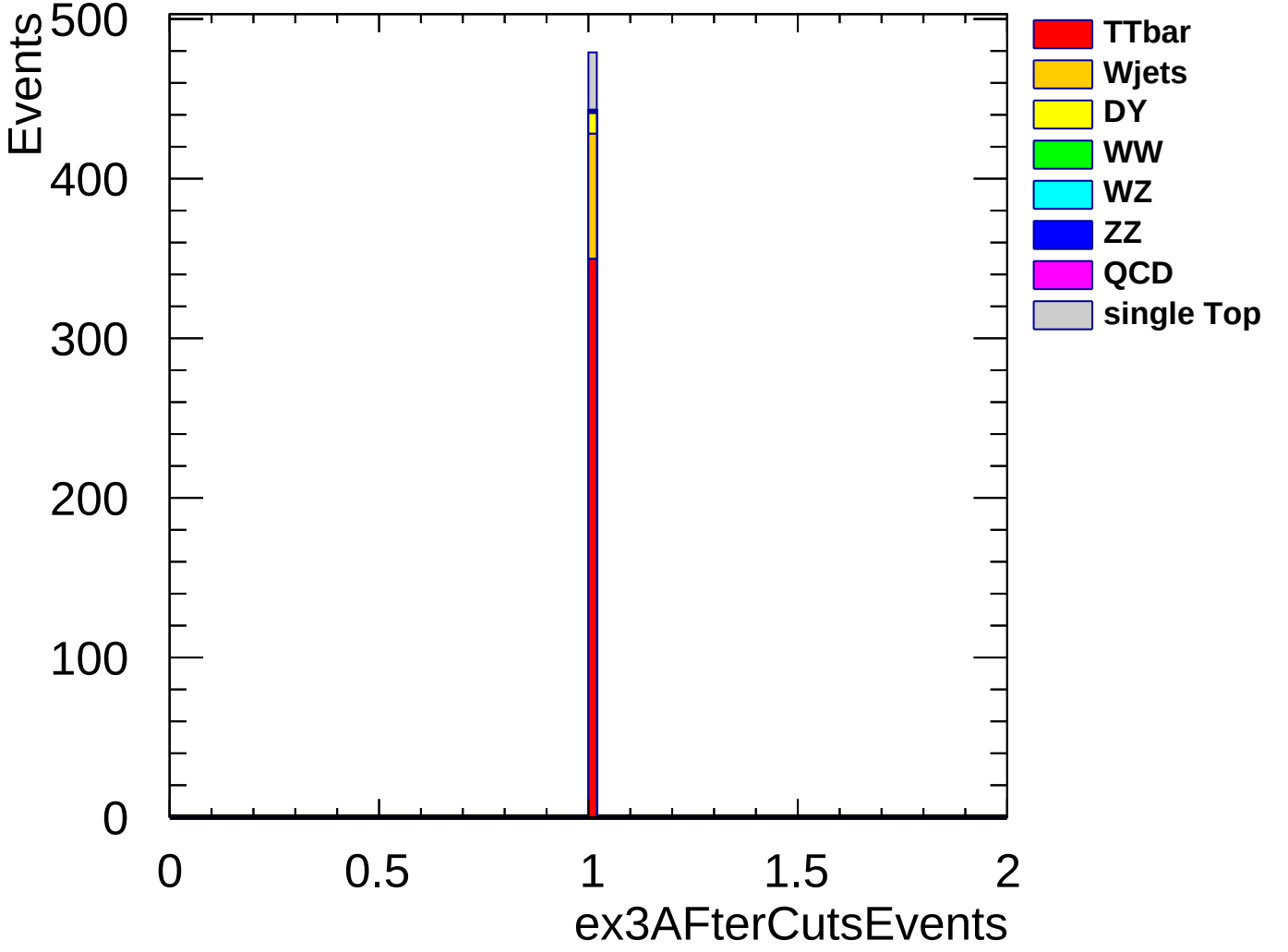

Events
1200
1000
800
600
400
200
0
1
1.2
1.4
1.6
1.8
2
S/B after cuts
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top

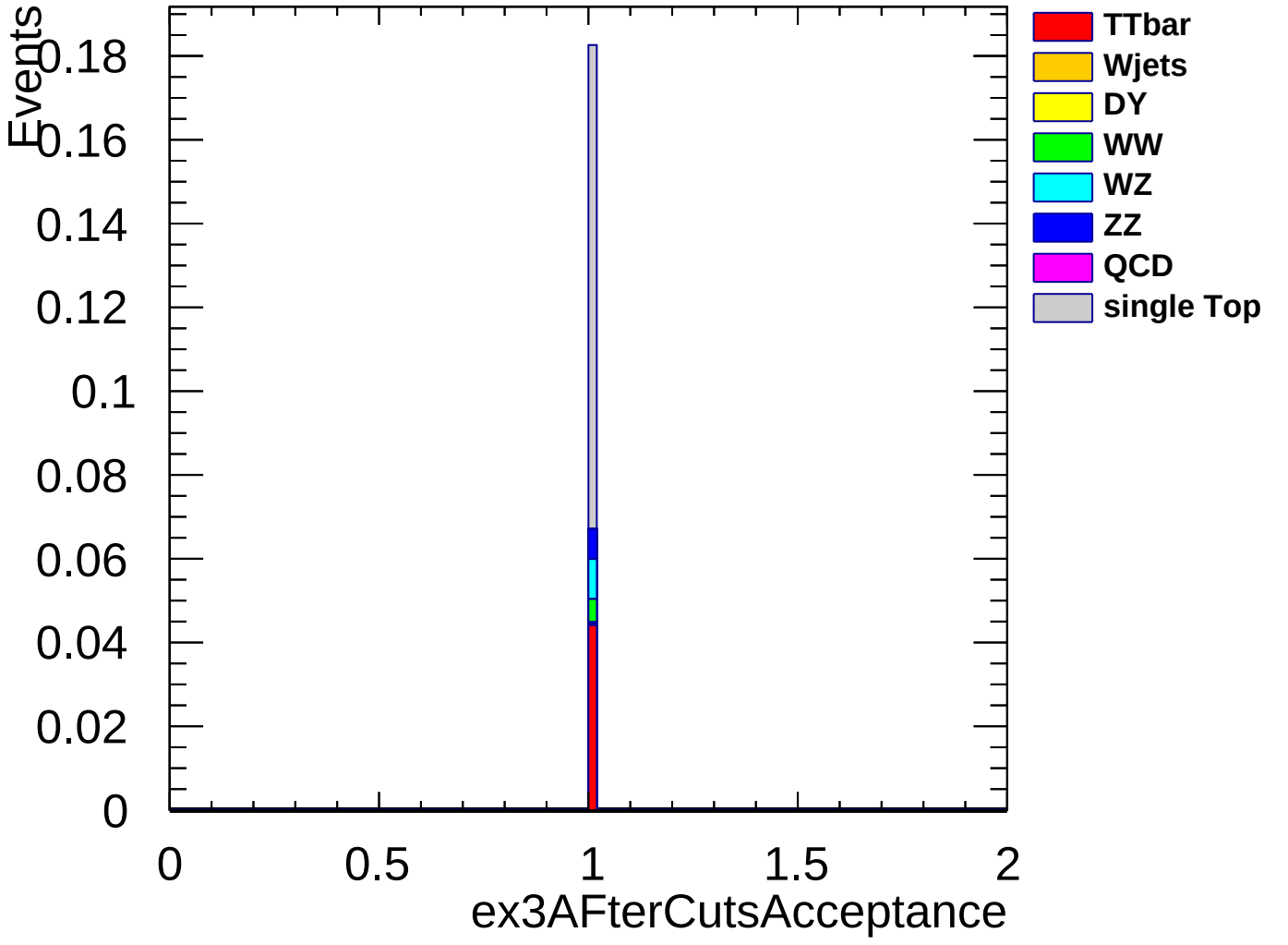

Events
30000
25000
20000
15000
10000
5000
0
0
50
100
150
200
muon pT
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top


Events
30000
25000
20000
15000
10000
5000
0
0
50
100
150
200
muon passed HLT pT
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top


Events
0
1
2
3
4
5
6
7
8
0
50
100
150
200
effiency for pT
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top


×10^3
Events
300
250
200
150
100
50
0
0
0.5
1
1.5
2
ex3TotalEvents
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top


Events
500
400
300
200
100
0
0
0.5
1
1.5
2
ex3AFterCutsEvents
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top


Events
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0
0.5
1
1.5
2
ex3AFterCutsAcceptance
TTbar
Wjets
DY
WW
WZ
ZZ
QCD
single Top