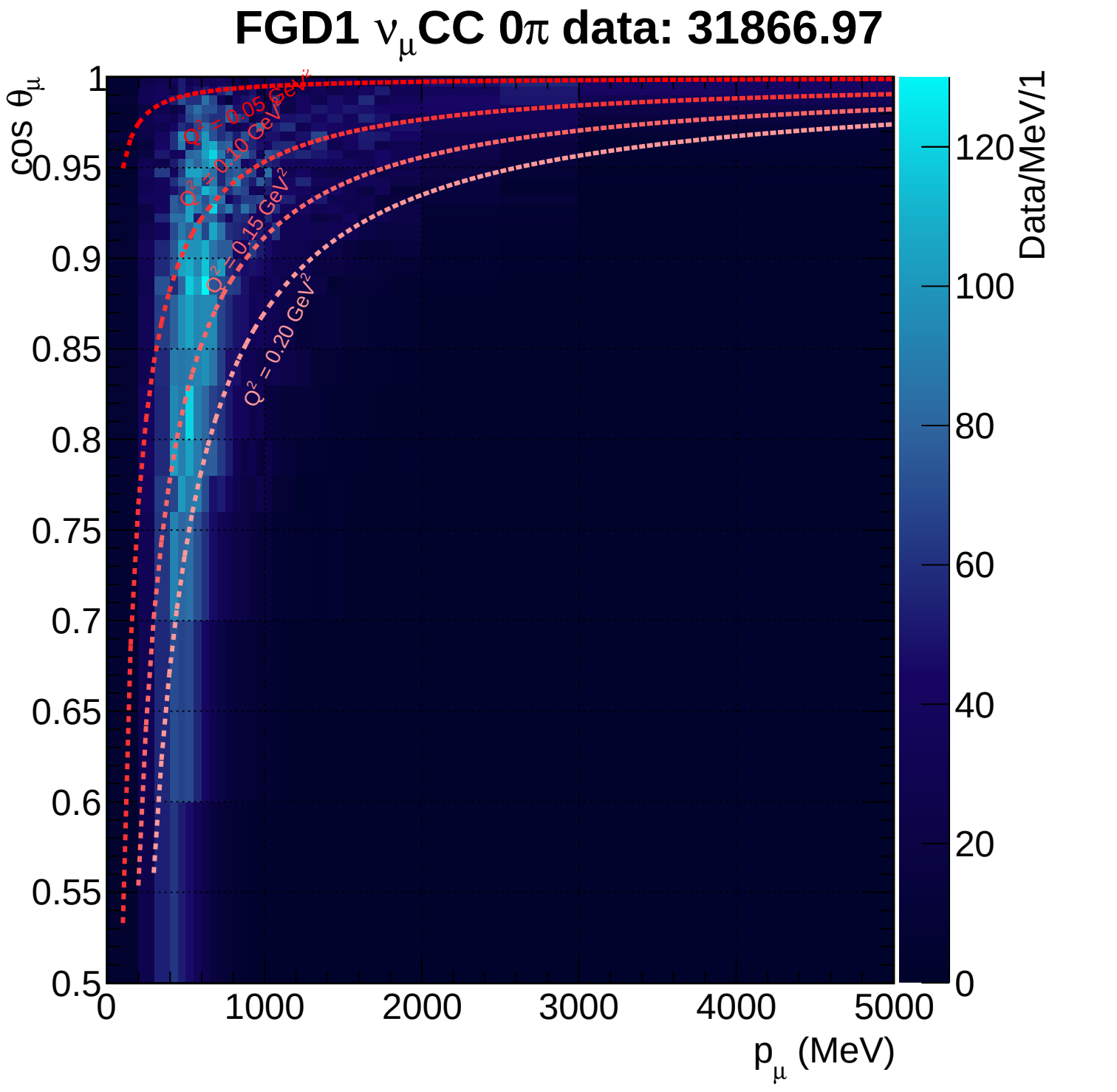
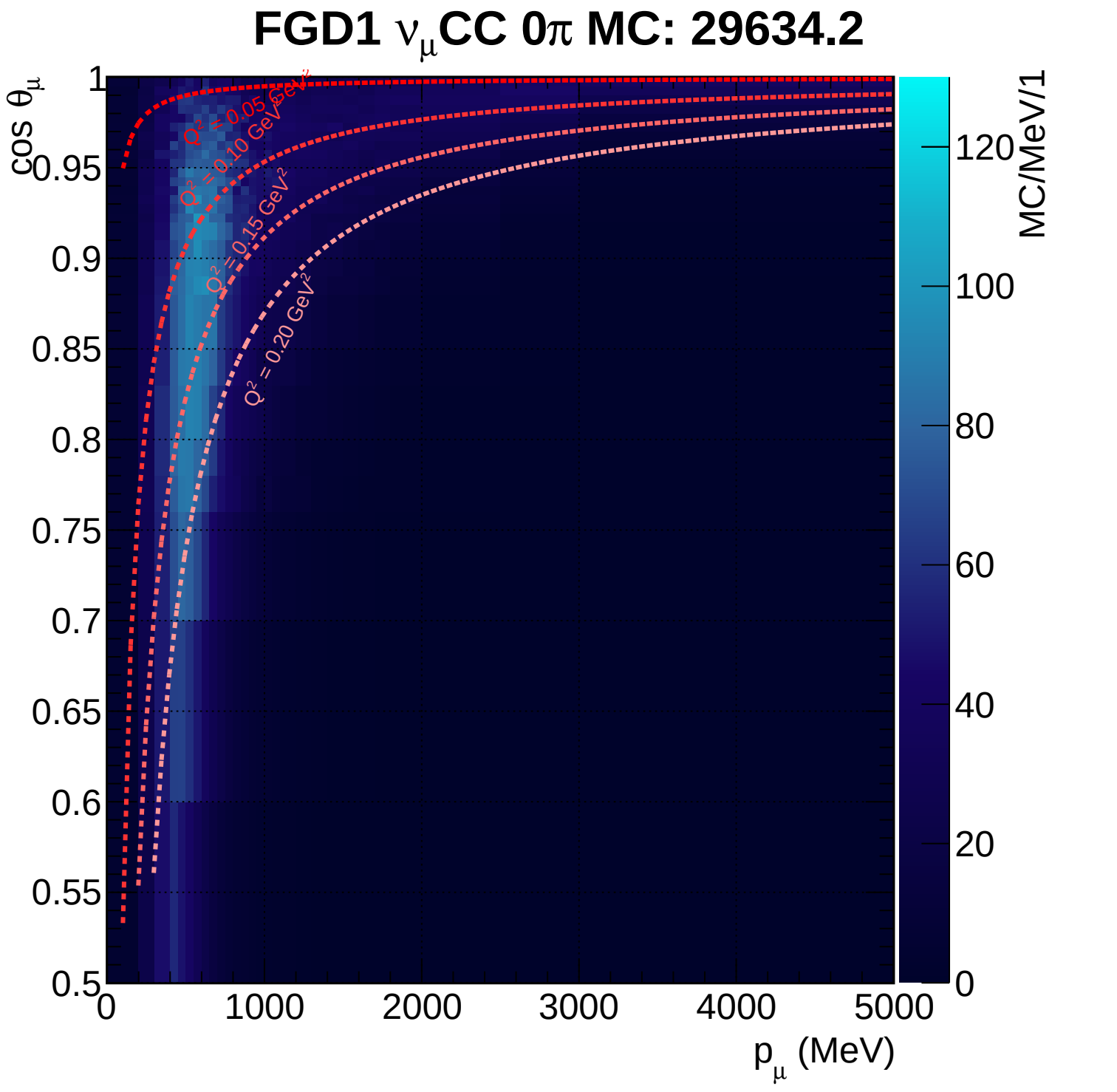
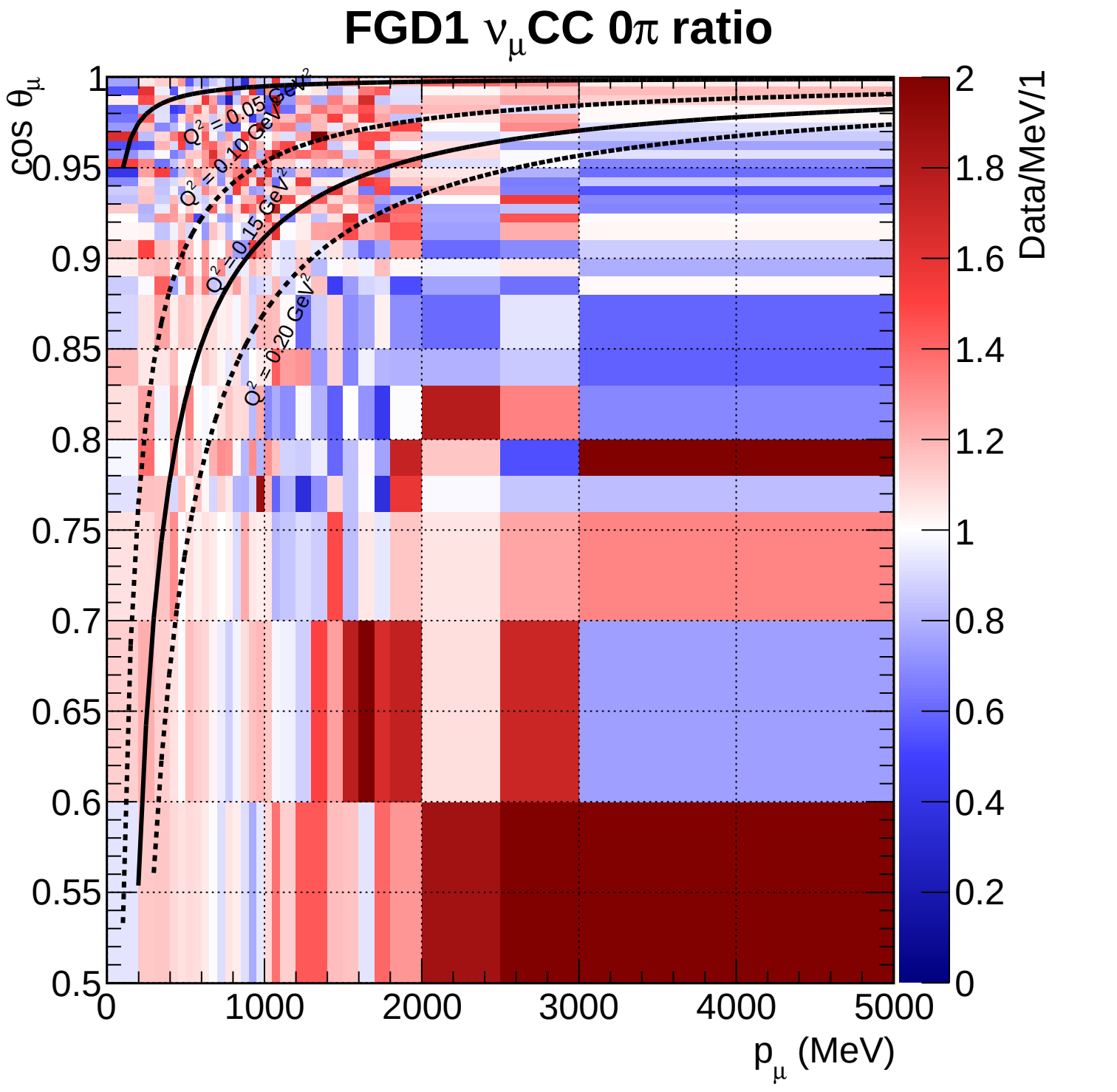
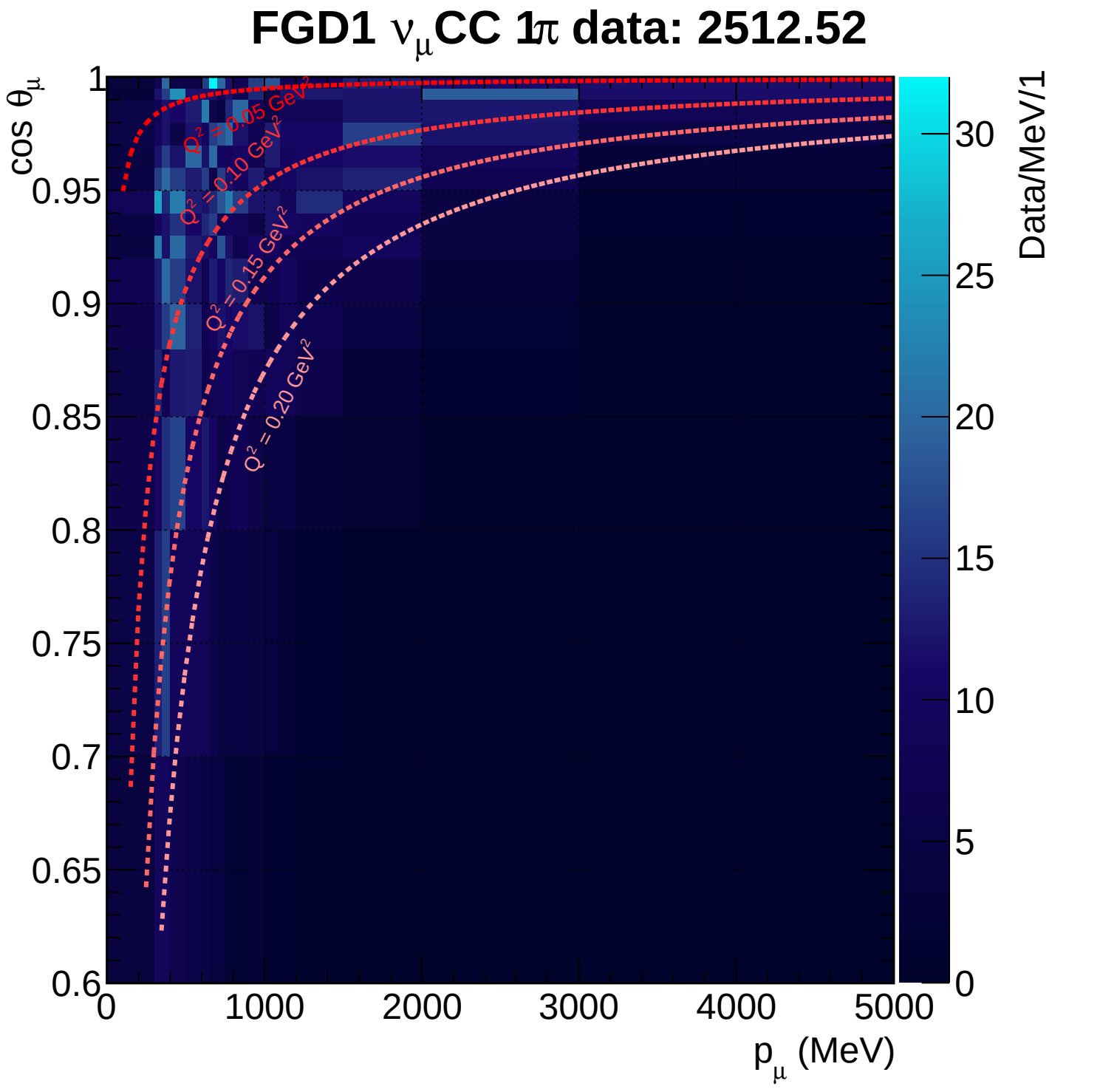
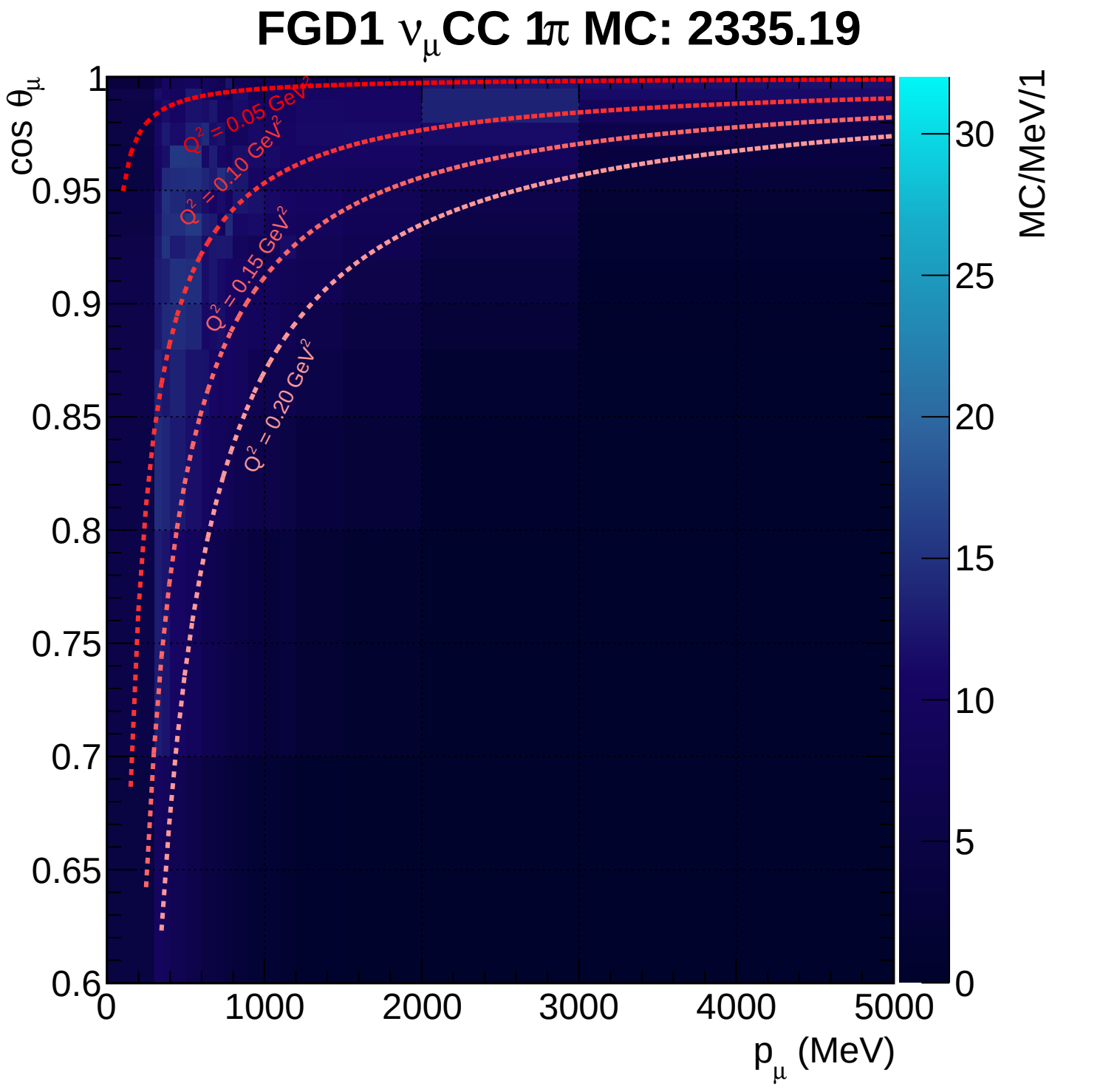
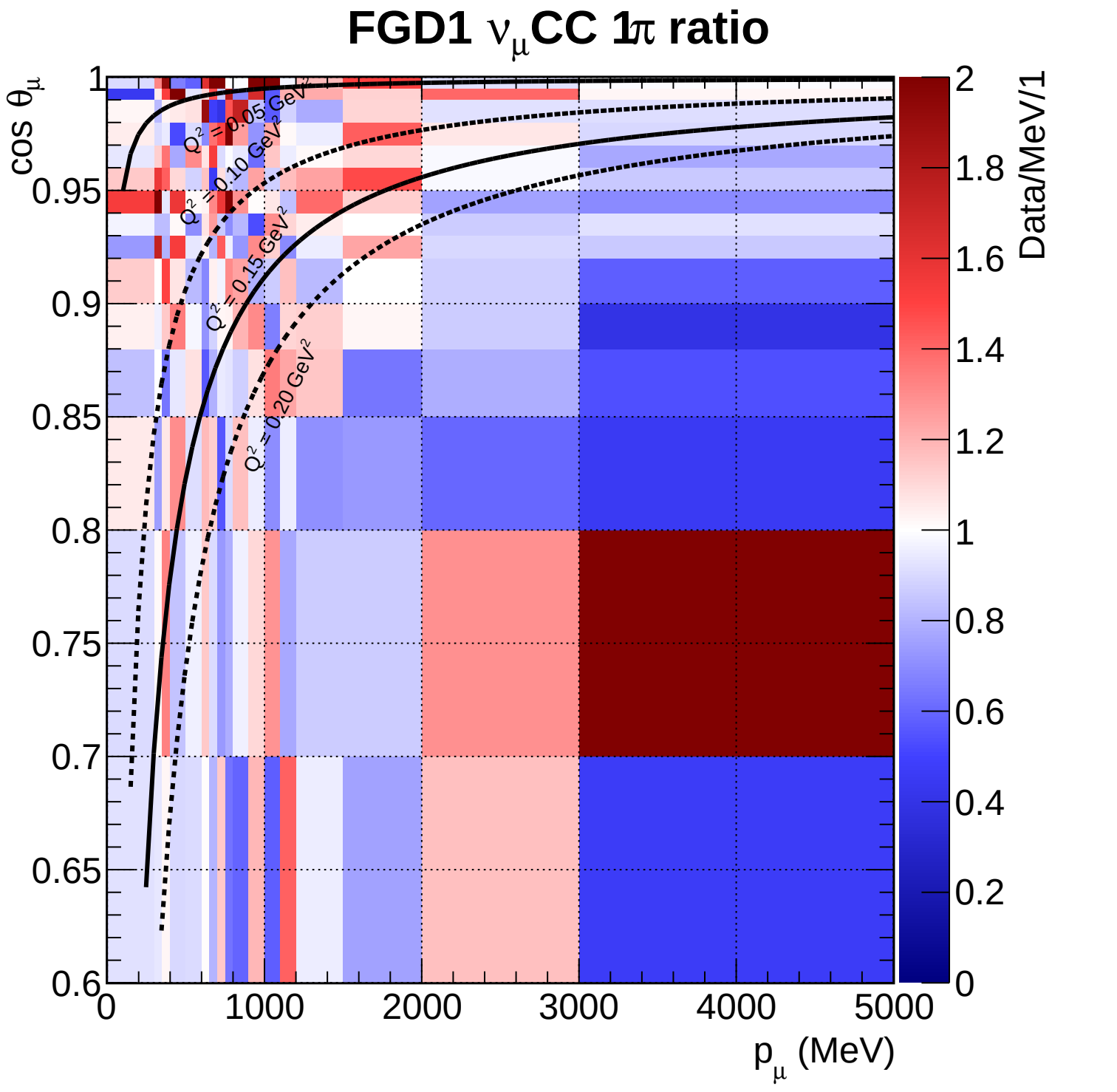

FGD1 ν_μCC 0π data: 31866.97
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
5000
p_μ (MeV)
Data/MeV/1
120
100
80
60
40
20
0

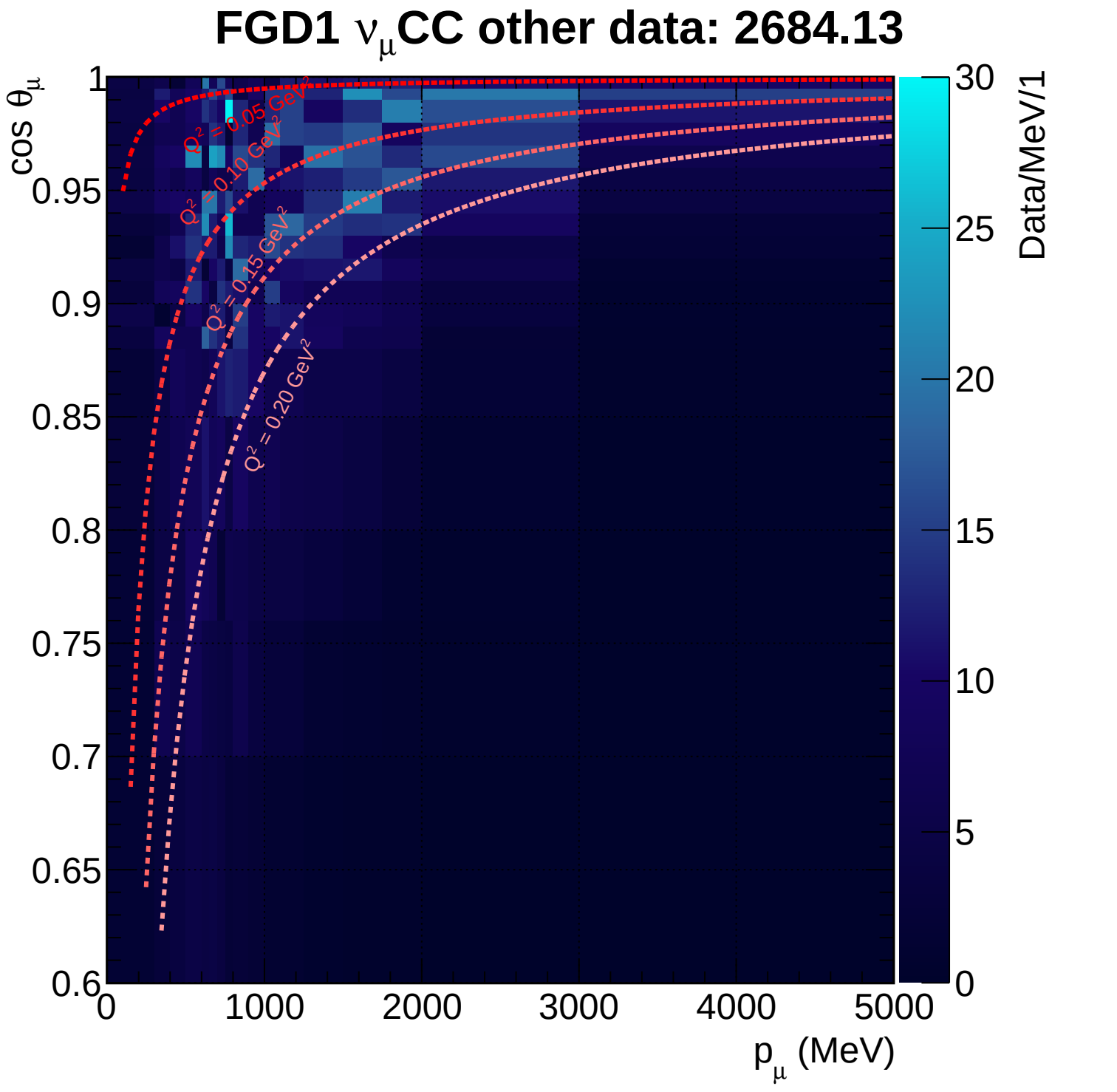

FGD1 ν_μCC 0π MC: 29634.2
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0
1000
2000
3000
4000
5000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
MC/MeV/1
120
100
80
60
40
20
0

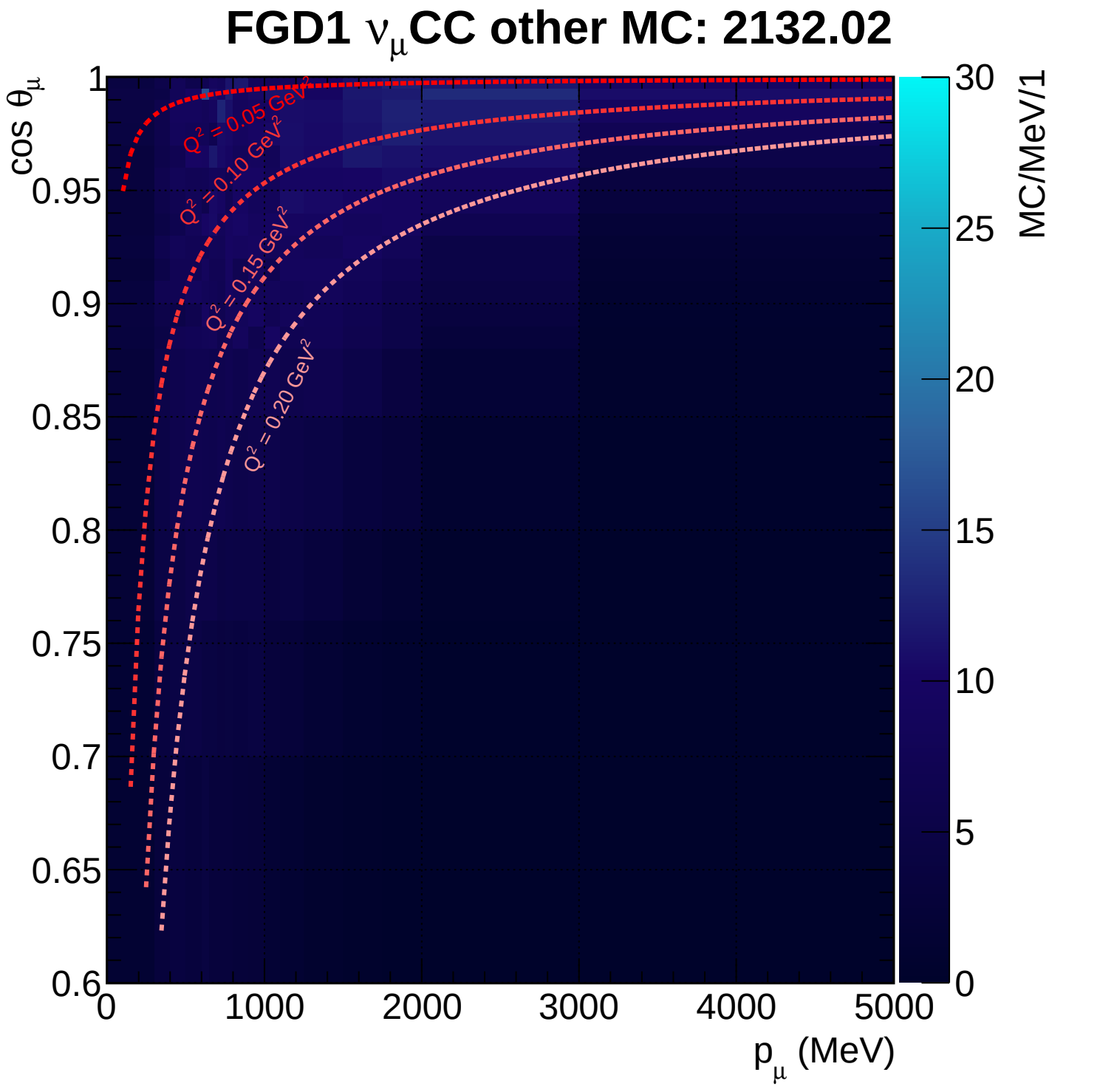

FGD1 ν_μCC 0π ratio
cos θ_μ
p_μ (MeV)
Data/MeV/1
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0
1000
2000
3000
4000
5000
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

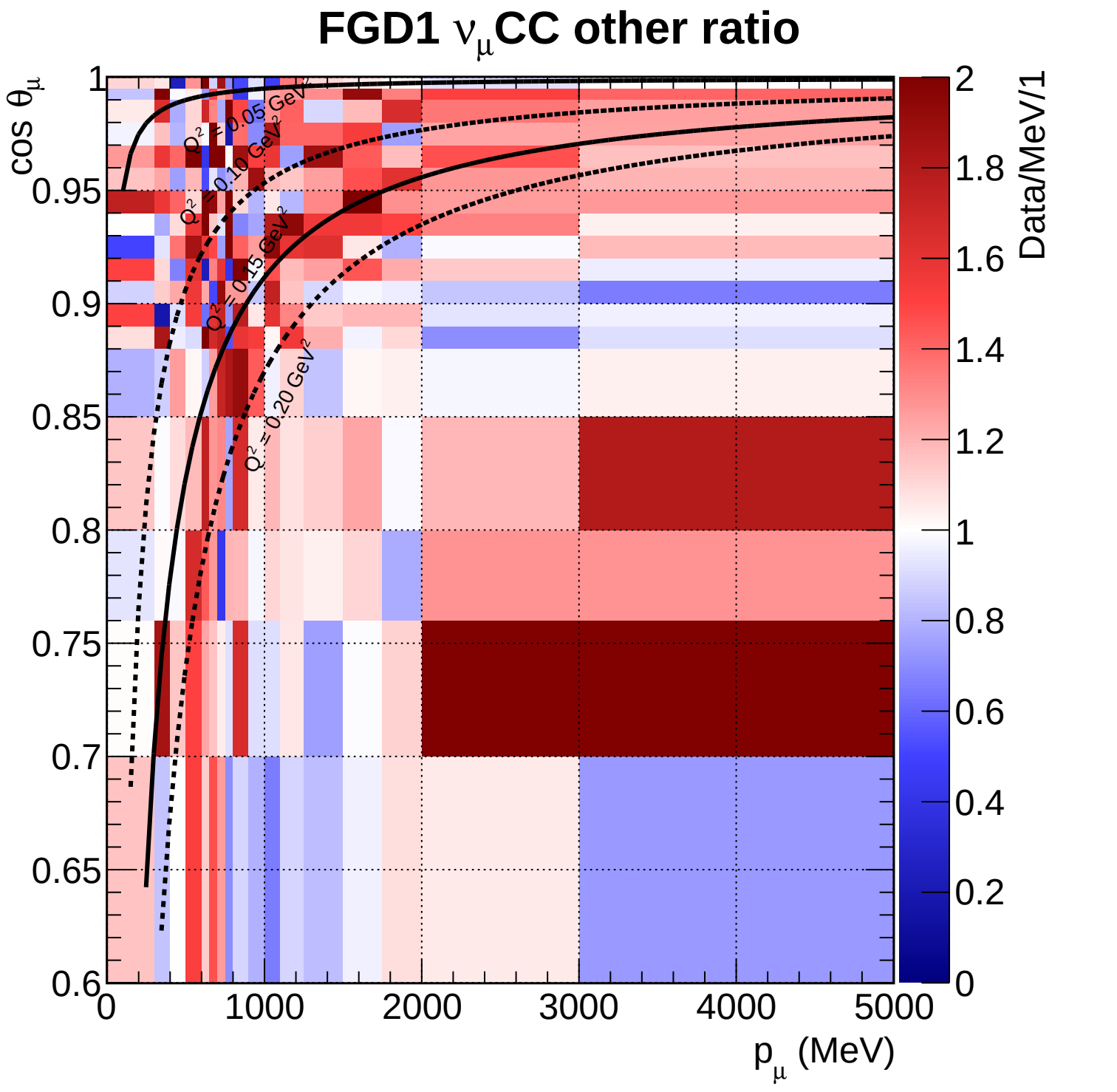

FGD1 ν_μCC 1π data: 2512.52
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
1000
2000
3000
4000
5000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
30
25
20
15
10
5
0

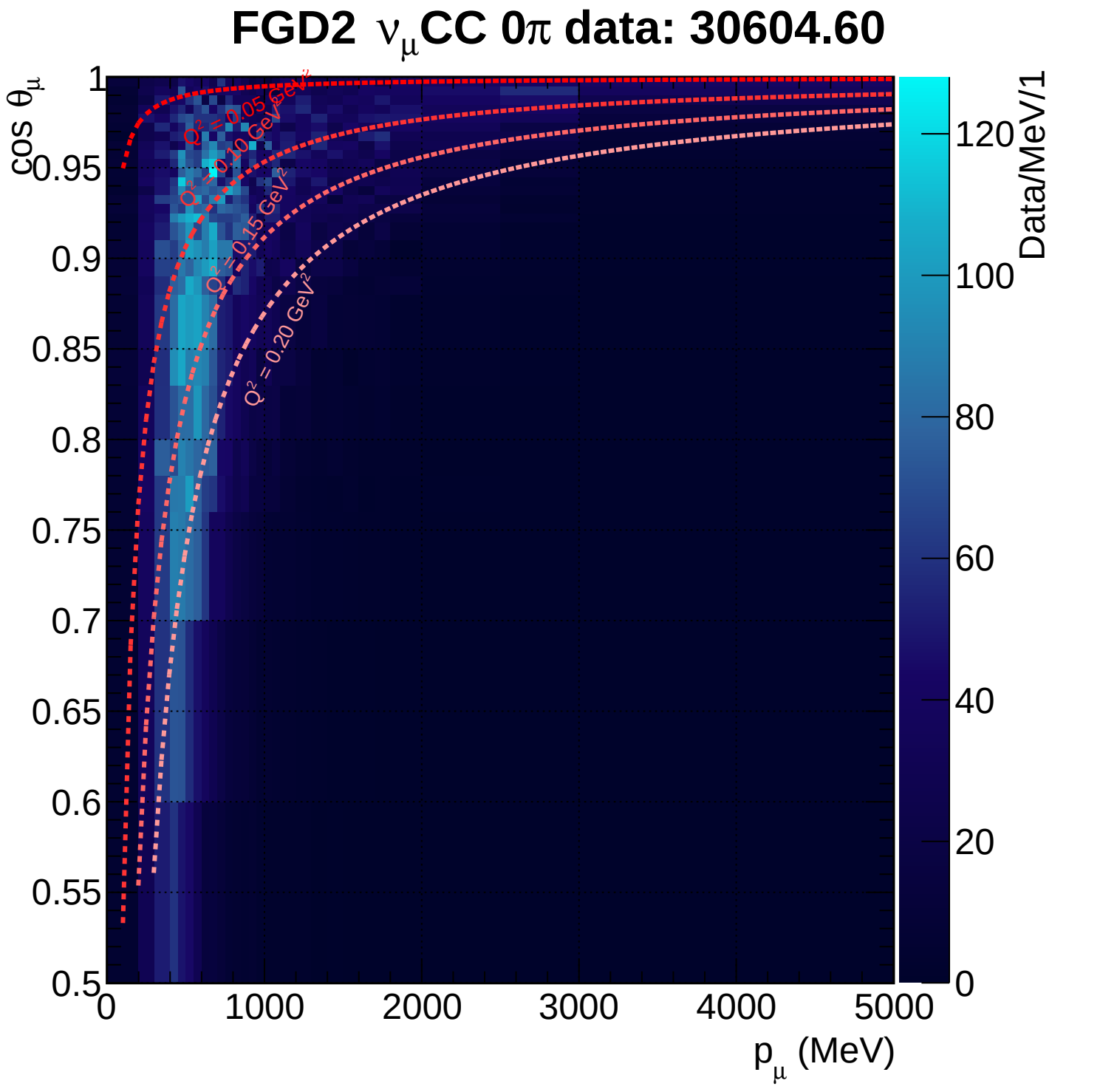

FGD1 ν_μCC 1π MC: 2335.19
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
5000
p_μ (MeV)
MC/MeV/1
30
25
20
15
10
5
0

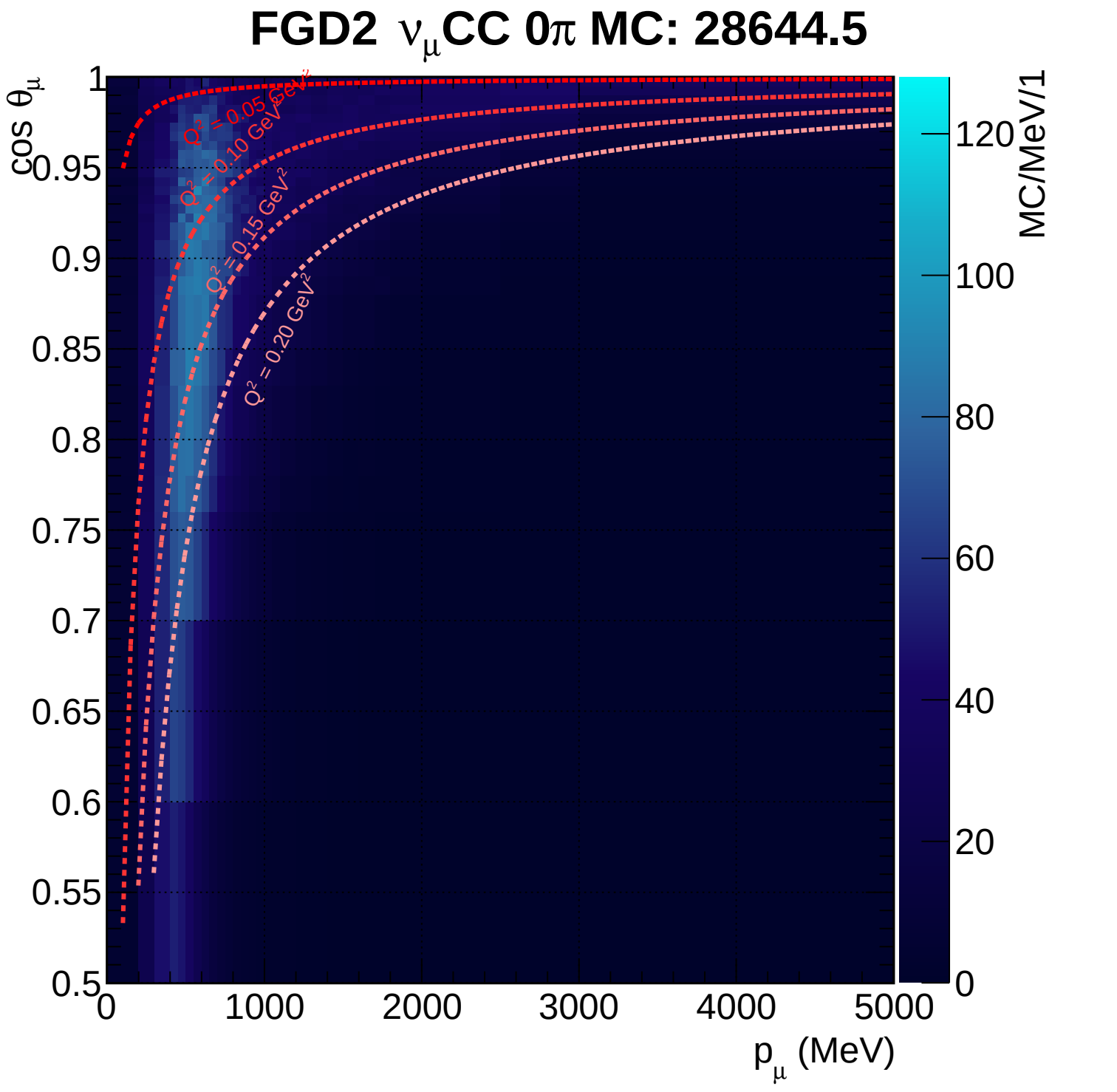

FGD1 ν_μCC 1π ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
5000
p_μ (MeV)
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

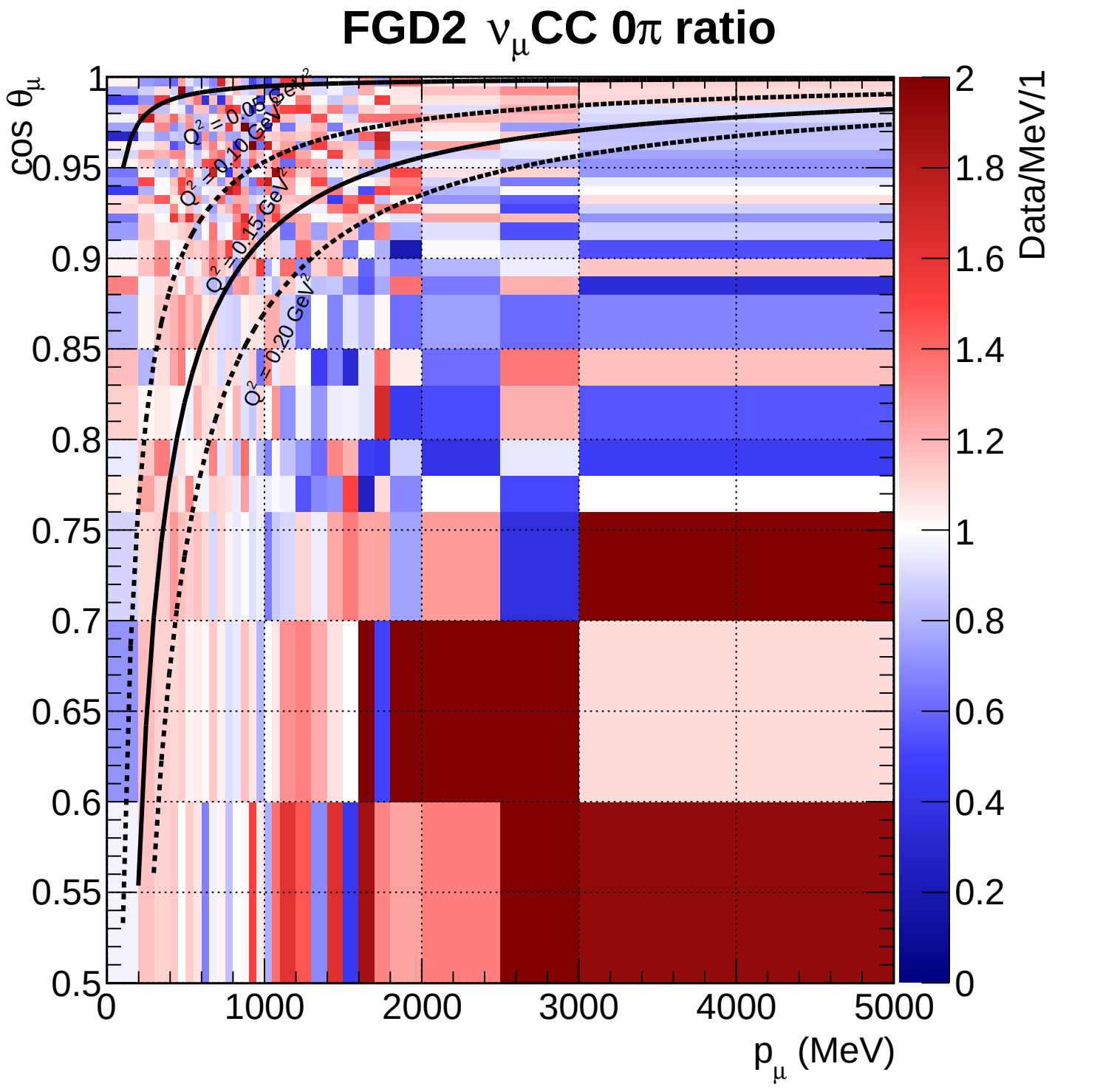

FGD1 ν_μCC other data: 2684.13
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
5000
p_μ (MeV)
Data/MeV/1
30
25
20
15
10
5
0

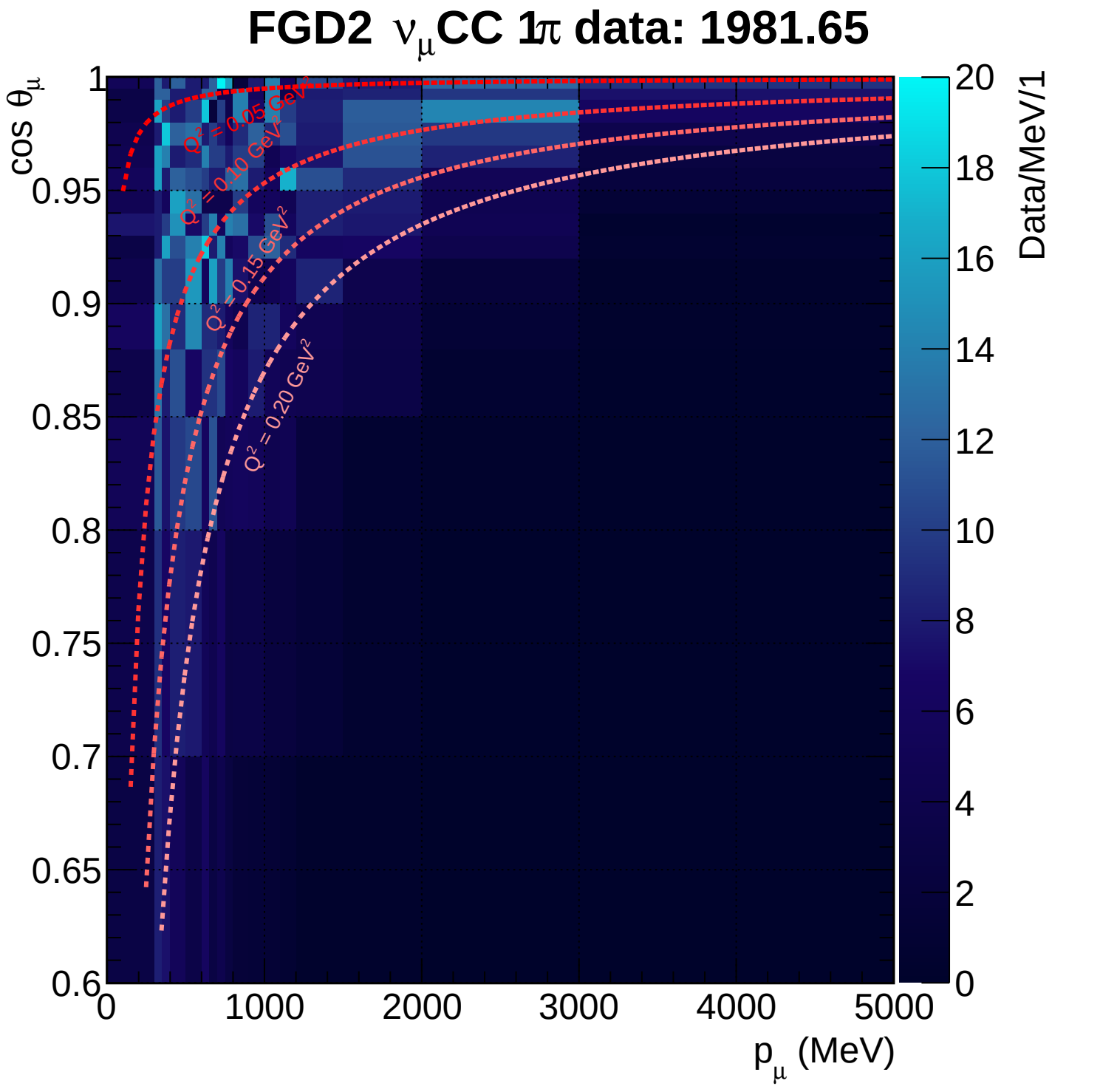

FGD1 ν_μCC other MC: 2132.02
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
5000
p_μ (MeV)
MC/MeV/1
30
25
20
15
10
5
0

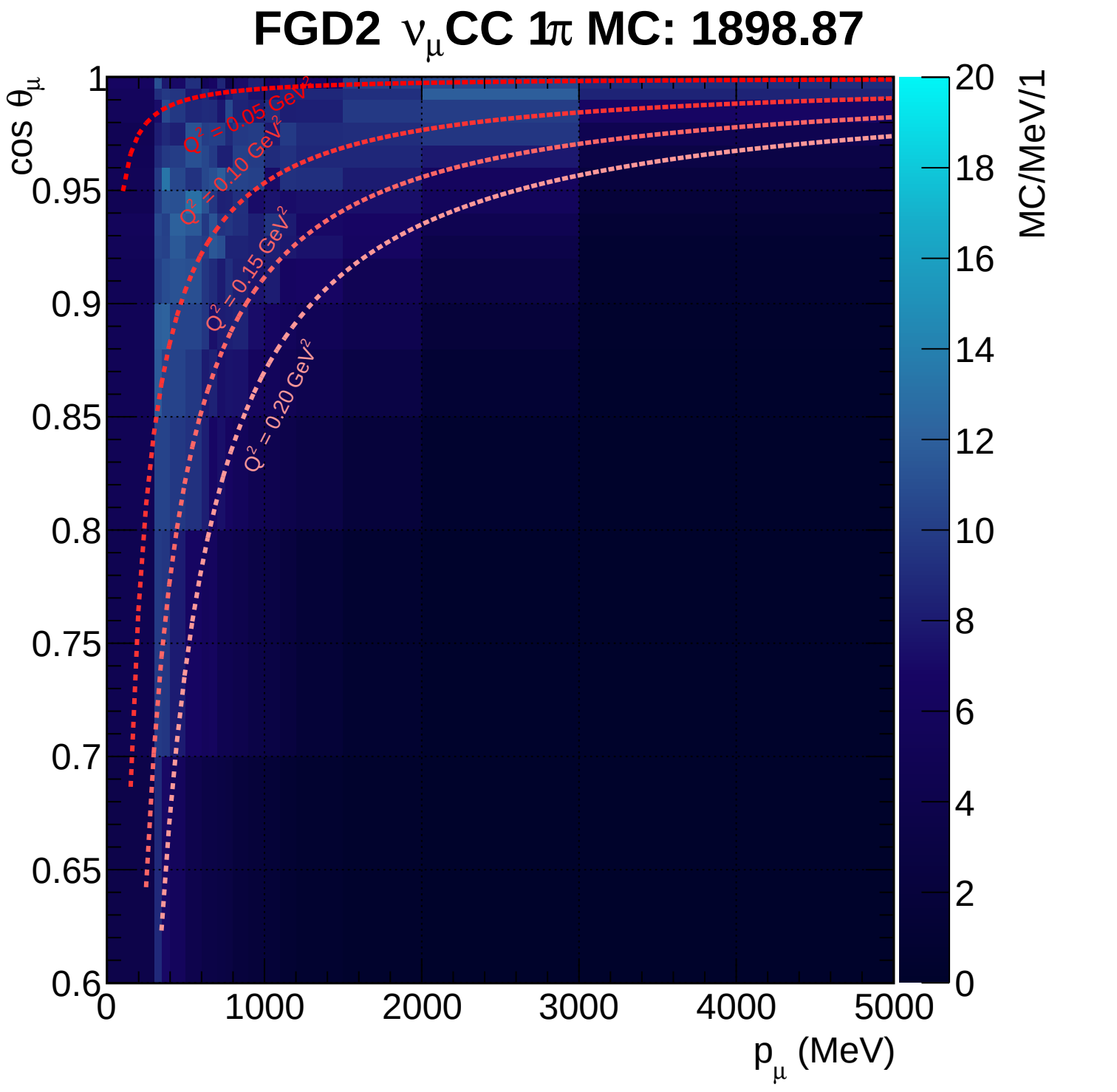

FGD1 ν_μCC other ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
1000
2000
3000
4000
5000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

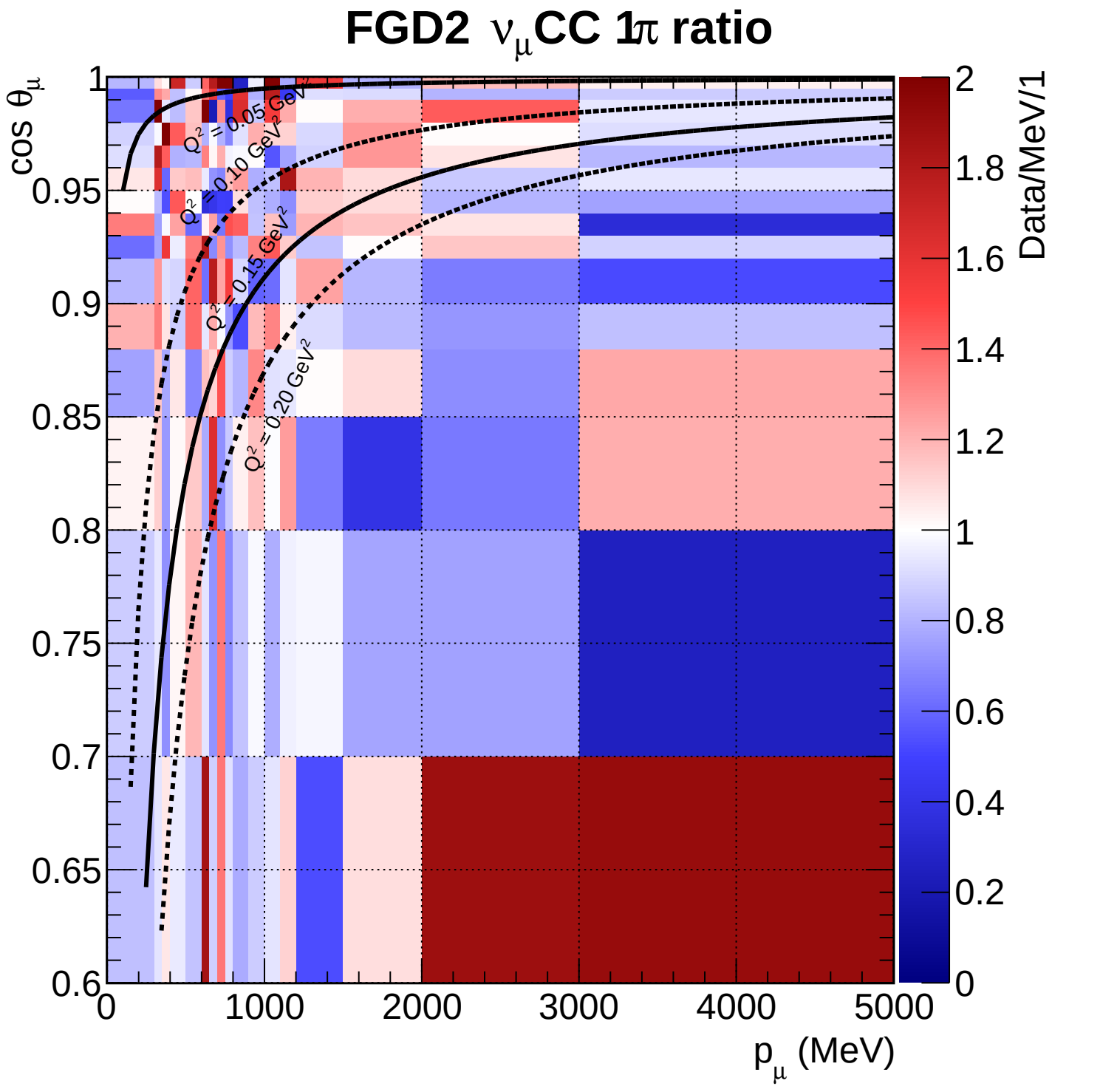

FGD2 ν_μCC 0π data: 30604.60
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0
1000
2000
3000
4000
5000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
120
100
80
60
40
20
0

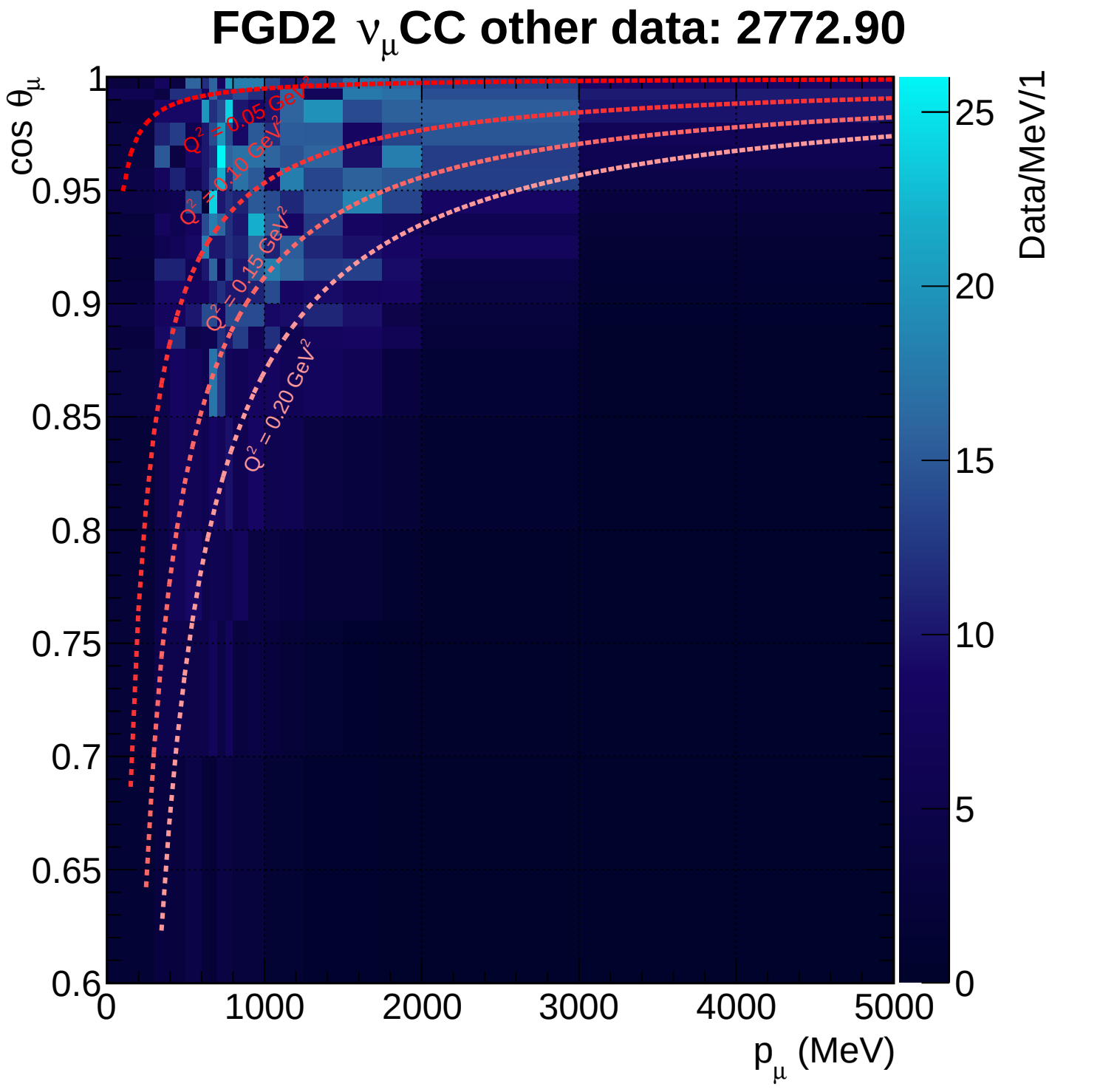

FGD2 ν_μCC 0π MC: 28644.5
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
5000
p_μ (MeV)
MC/MeV/1
120
100
80
60
40
20
0

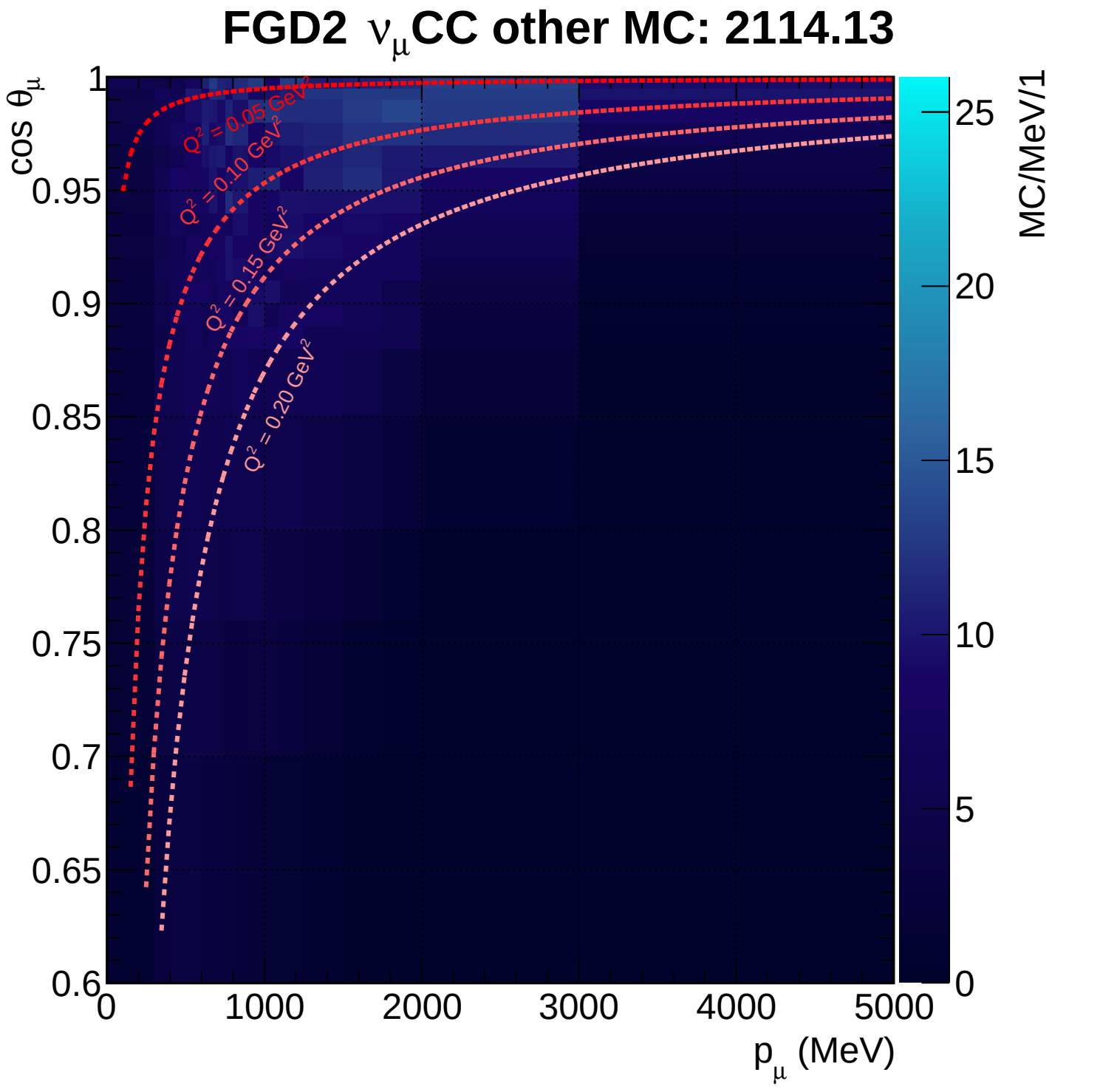

FGD2 ν_μCC 0π ratio
cos θ_μ
p_μ (MeV)
Data/MeV/1
$Q^2 = 0.05$ GeV^2
$Q^2 = 0.10$ GeV^2
$Q^2 = 0.15$ GeV^2
$Q^2 = 0.20$ GeV^2
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0
1000
2000
3000
4000
5000
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

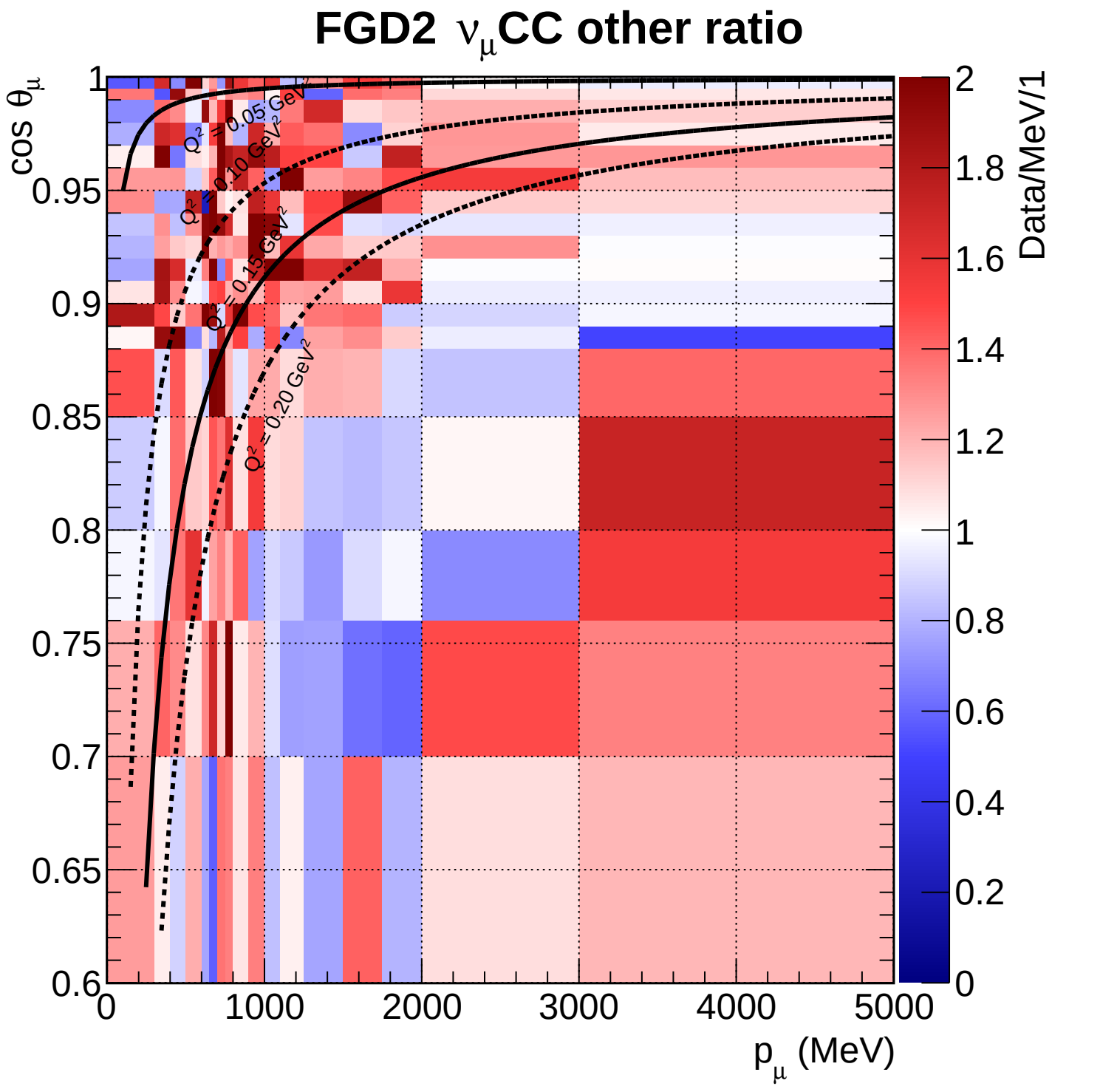

FGD2 ν_μCC 1π data: 1981.65
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
1000
2000
3000
4000
5000
p_μ (MeV)
Data/MeV/1
20
18
16
14
12
10
8
6
4
2
0
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2

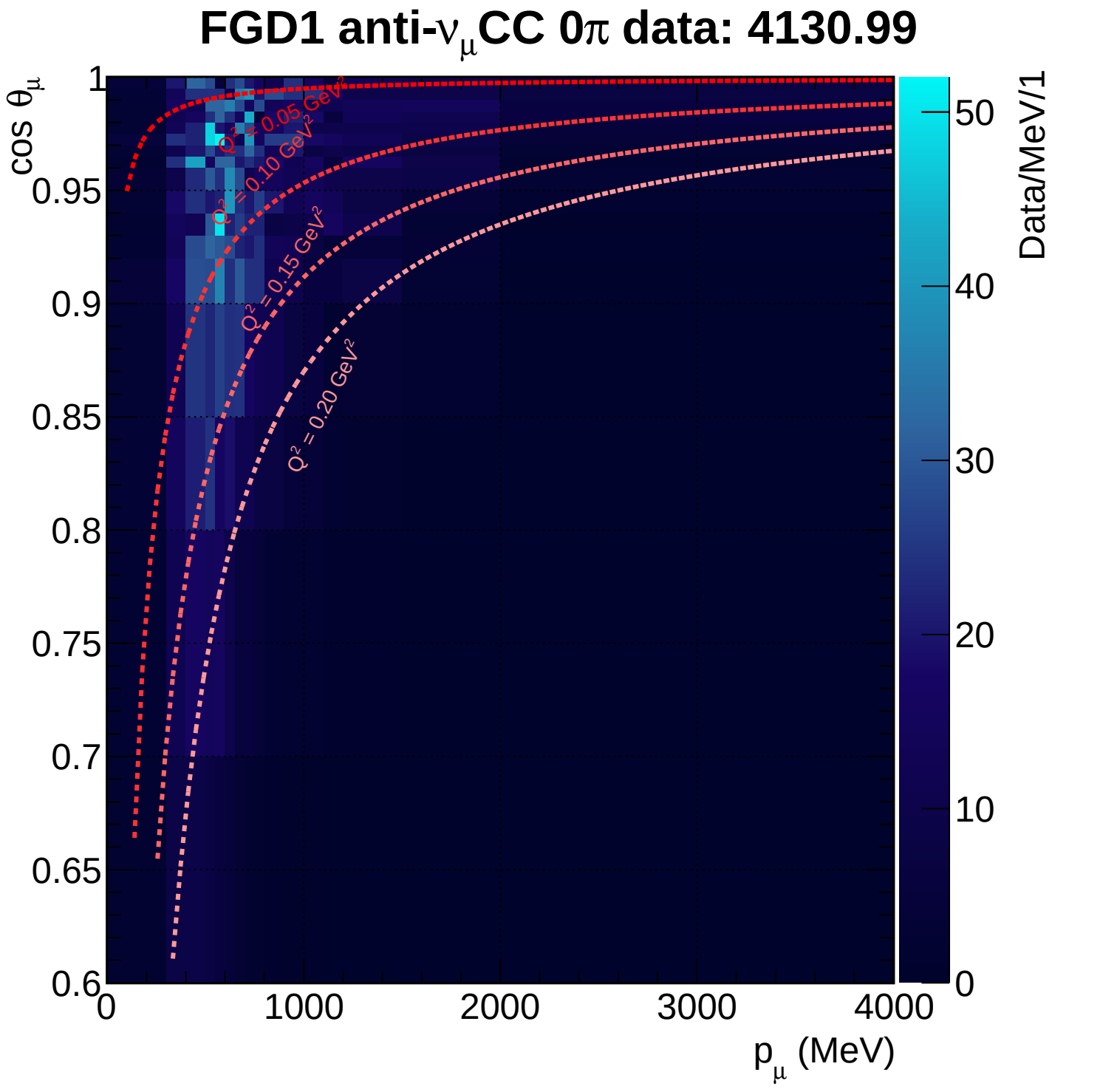

FGD2 ν_μCC 1π MC: 1898.87
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
1000
2000
3000
4000
5000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
MC/MeV/1
20
18
16
14
12
10
8
6
4
2
0

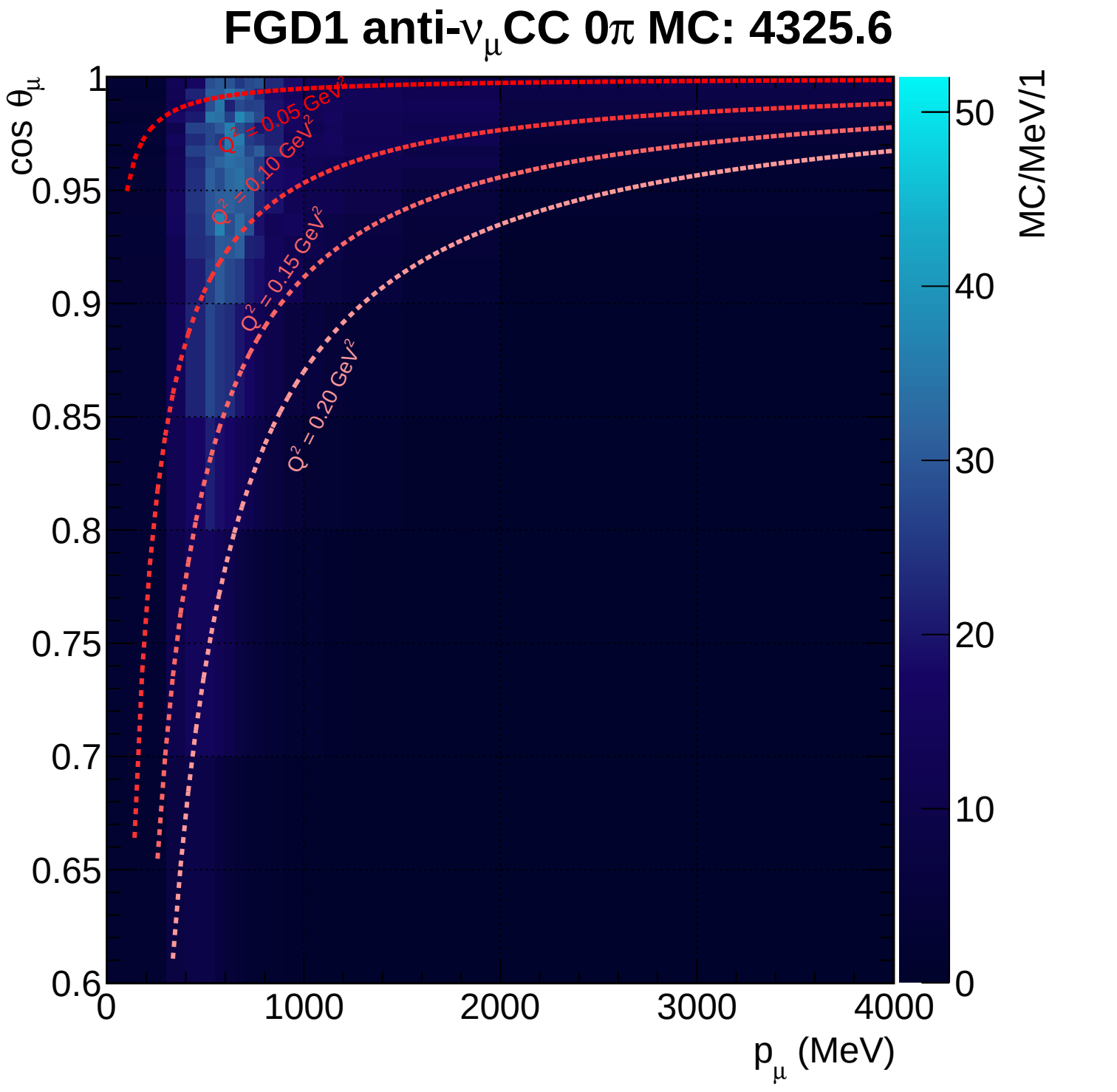

FGD2 ν_μCC 1π ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
5000
p_μ (MeV)
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

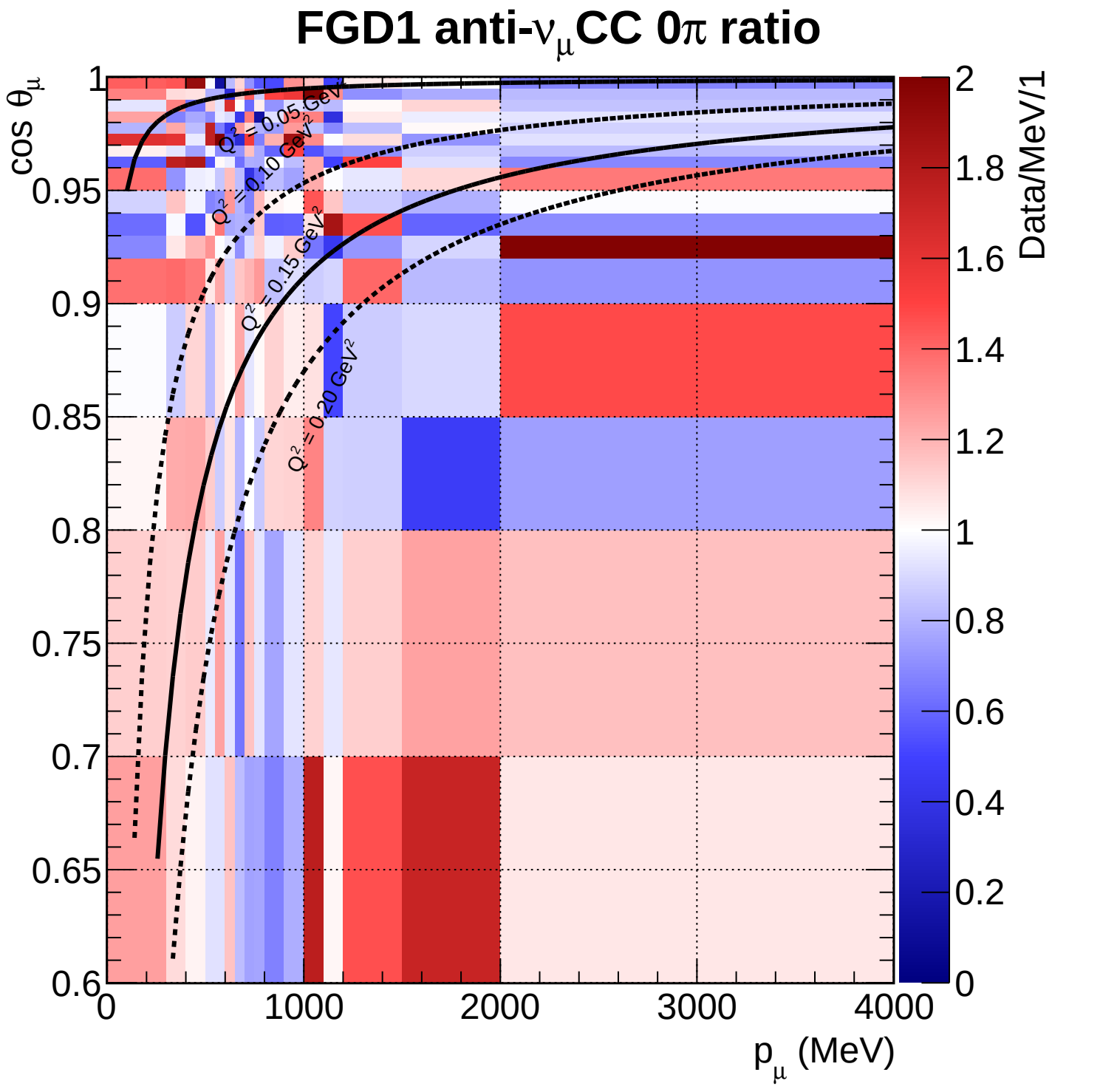

FGD2 ν_μCC other data: 2772.90
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
5000
p_μ (MeV)
Data/MeV/1
25
20
15
10
5
0

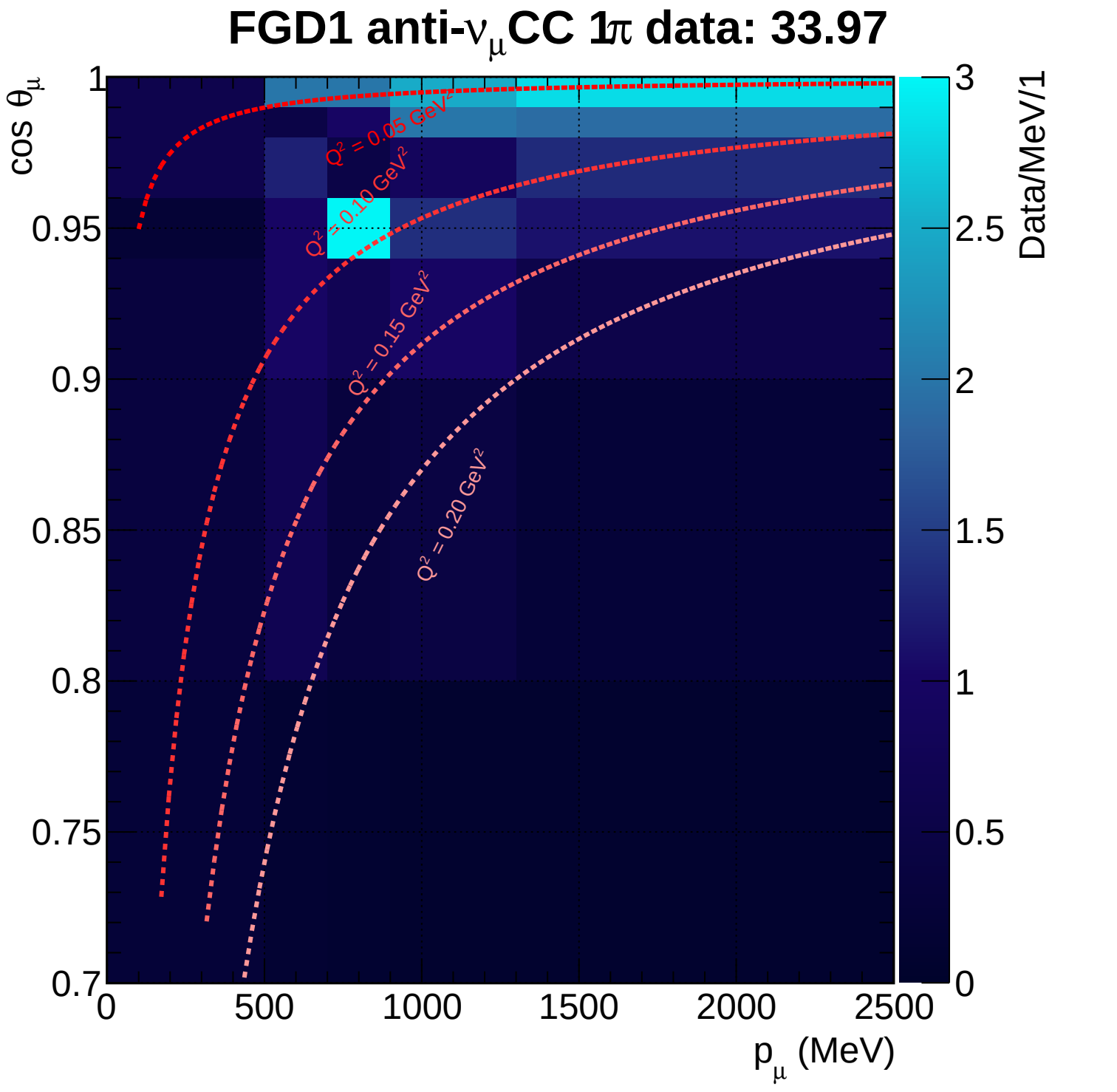

FGD2 ν_μCC other MC: 2114.13
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
5000
p_μ (MeV)
MC/MeV/1
25
20
15
10
5
0

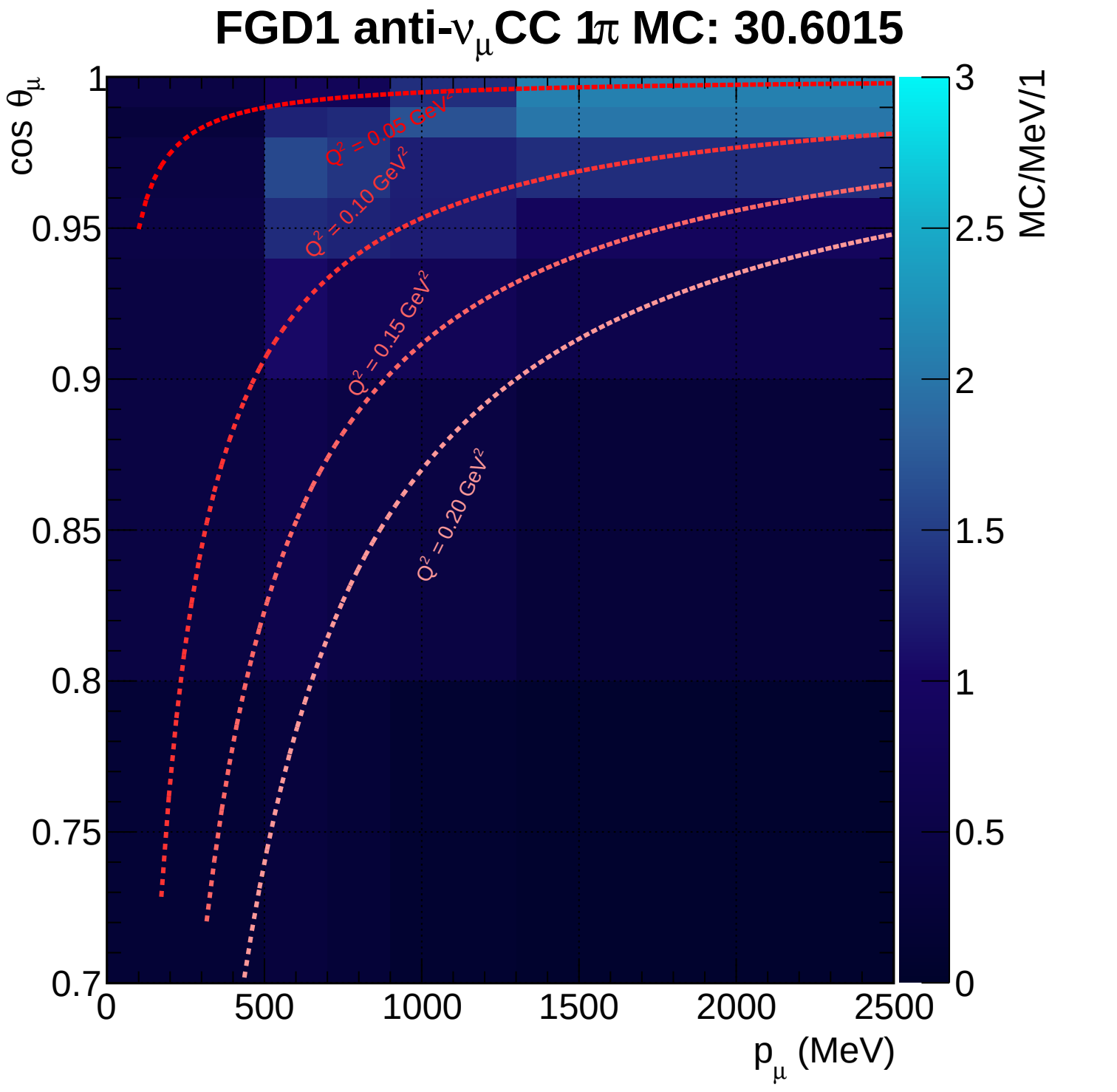

FGD2 ν_μCC other ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
1000
2000
3000
4000
5000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

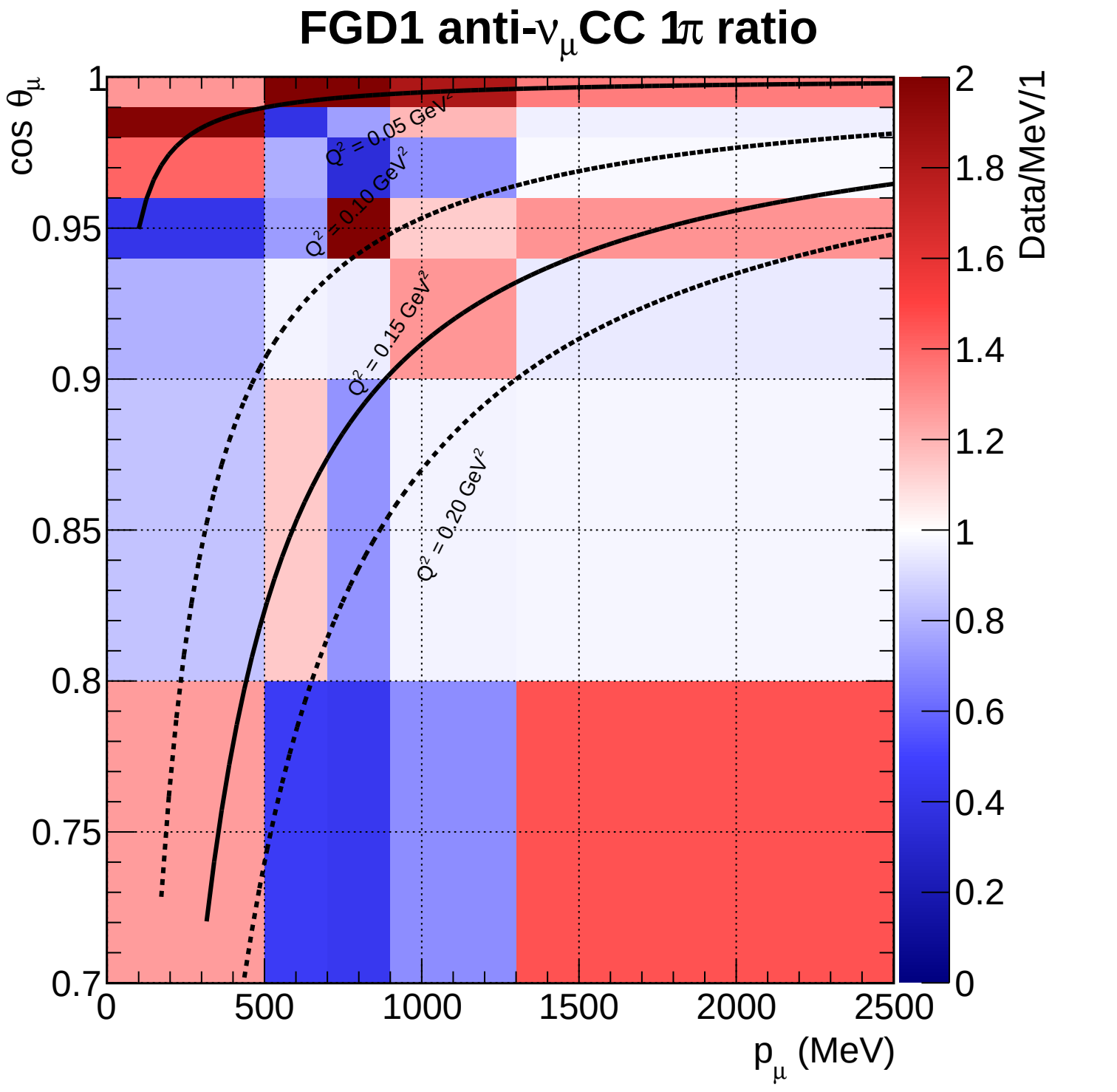

FGD1 anti-ν_μCC 0π data: 4130.99
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
50
40
30
20
10
0

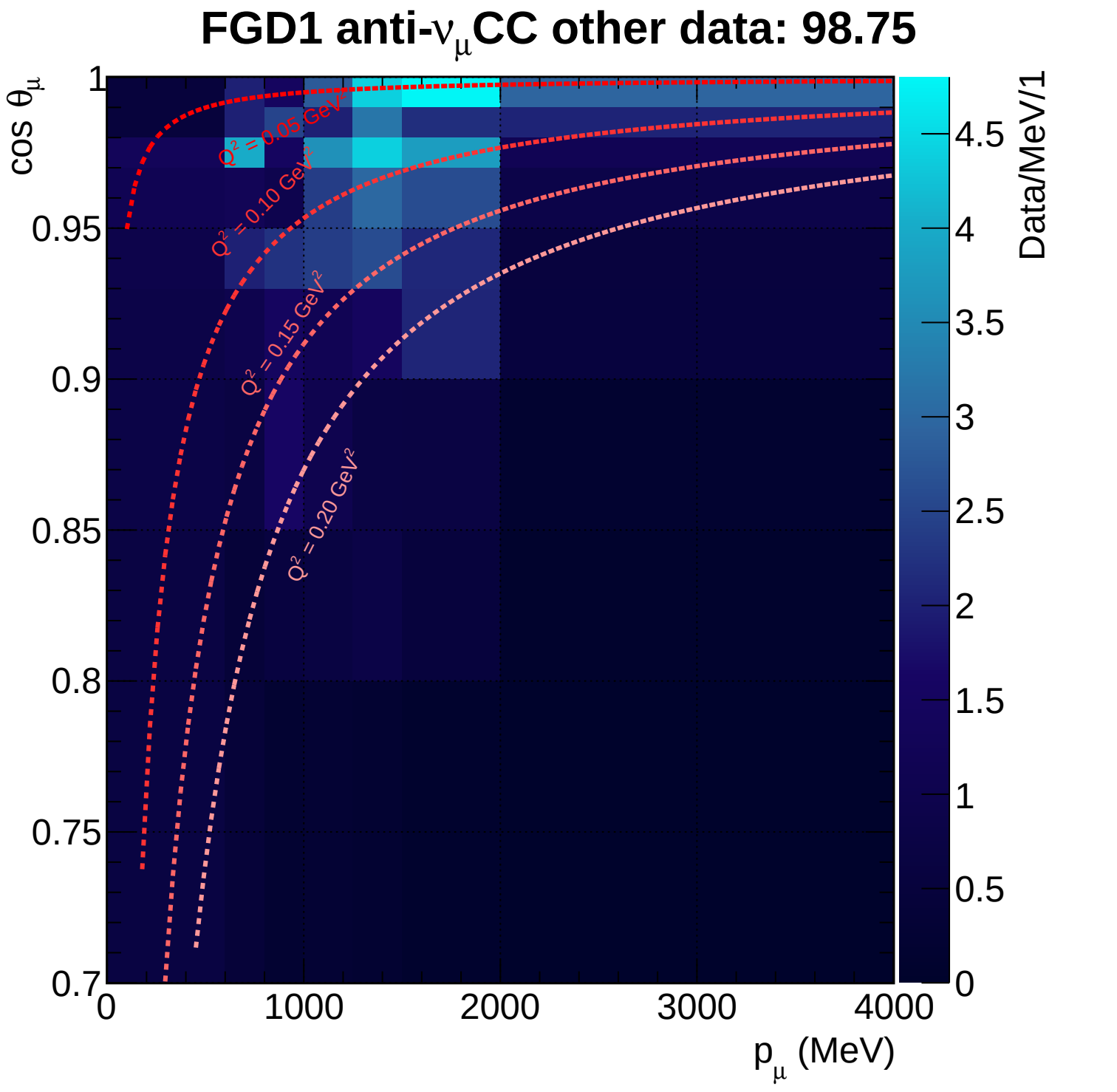

FGD1 anti-ν_μCC 0π MC: 4325.6
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
MC/MeV/1
50
40
30
20
10
0

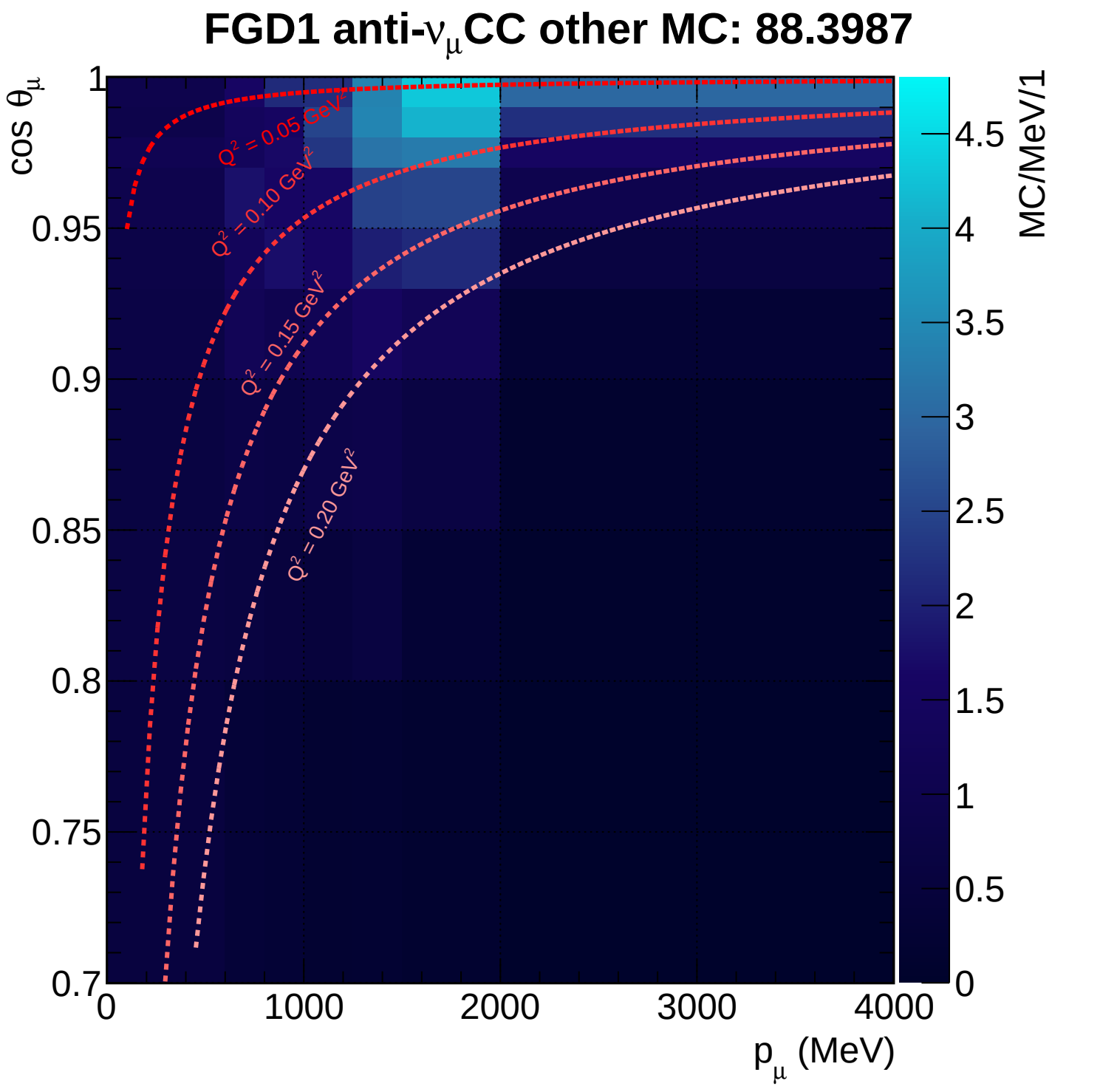

FGD1 anti-ν_μCC 0π ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

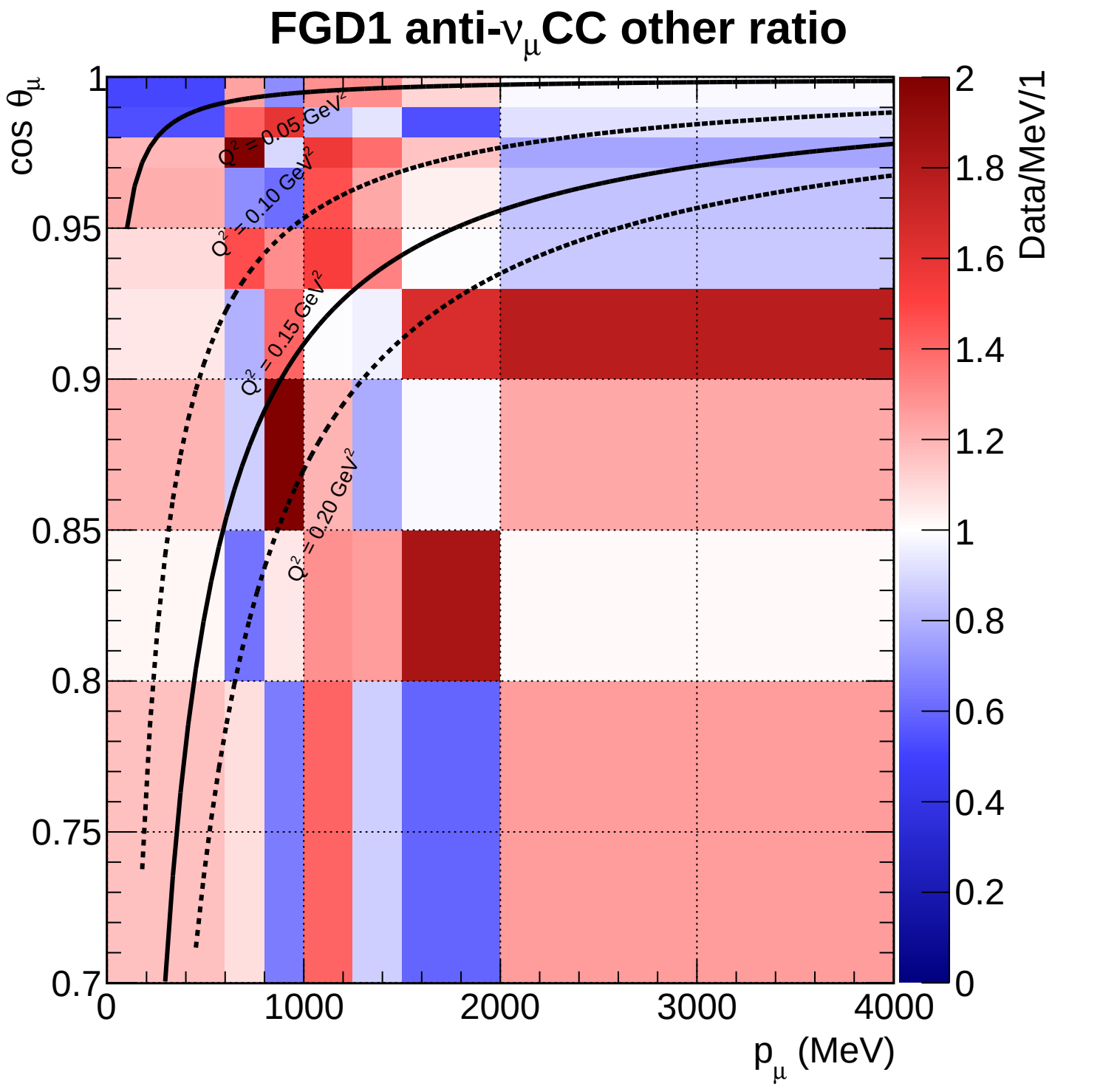

FGD1 anti-ν_μCC 1π data: 33.97
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
500
1000
1500
2000
2500
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
3
2.5
2
1.5
1
0.5
0

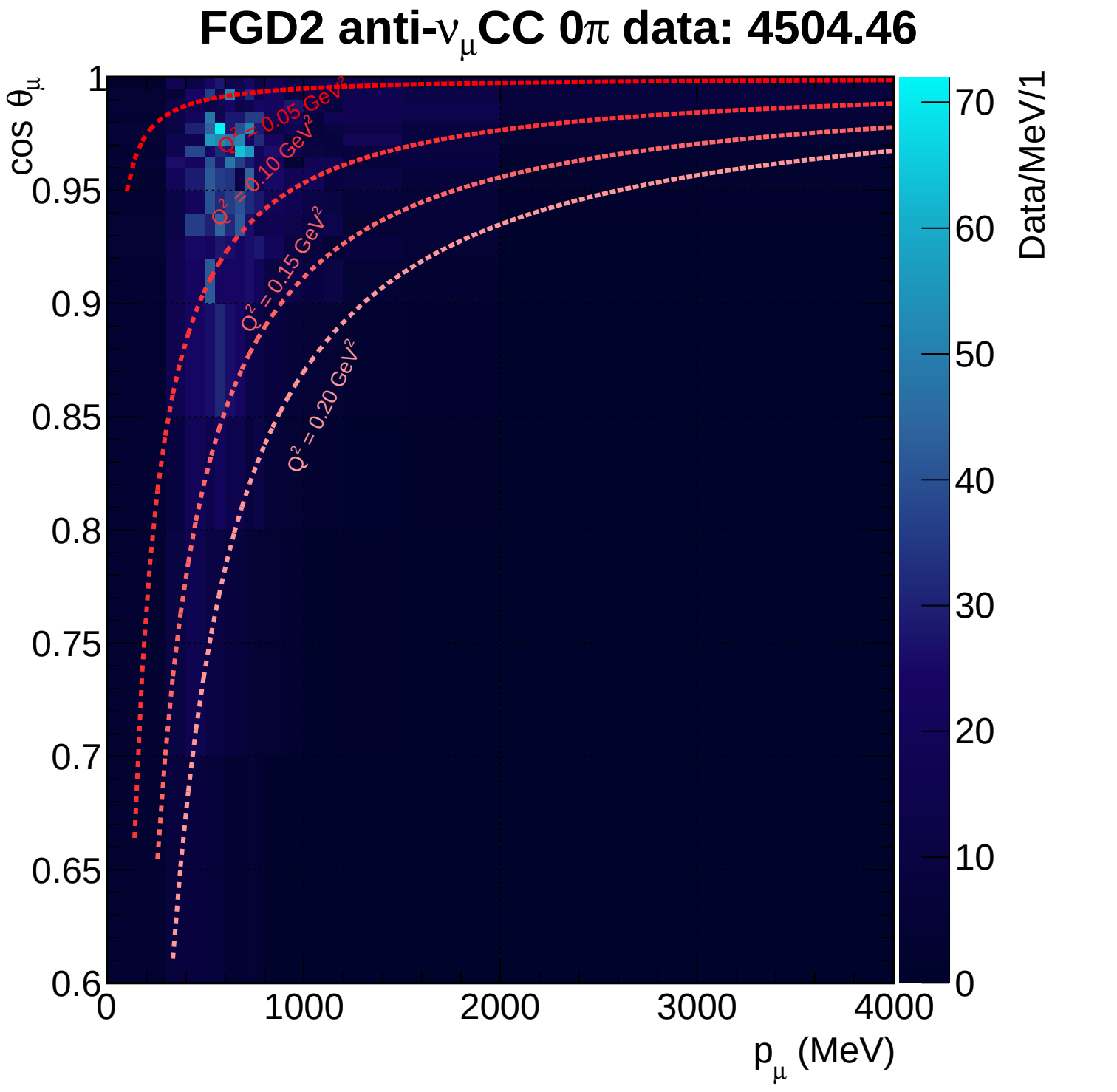

FGD1 anti-ν_μCC 1π MC: 30.6015
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
500
1000
1500
2000
2500
p_μ (MeV)
MC/MeV/1
3
2.5
2
1.5
1
0.5
0

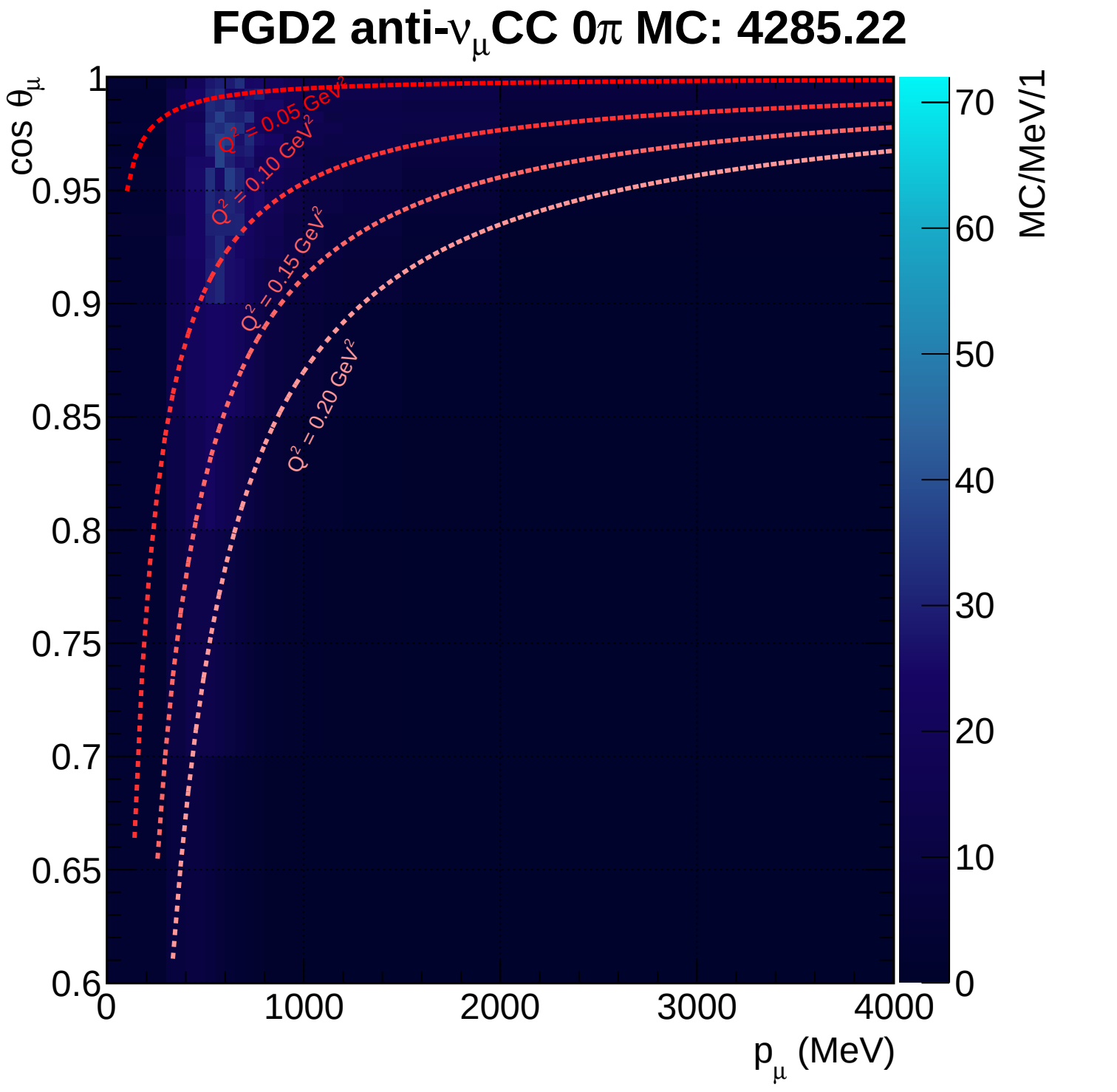

FGD1 anti-ν_μCC 1π ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
500
1000
1500
2000
2500
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

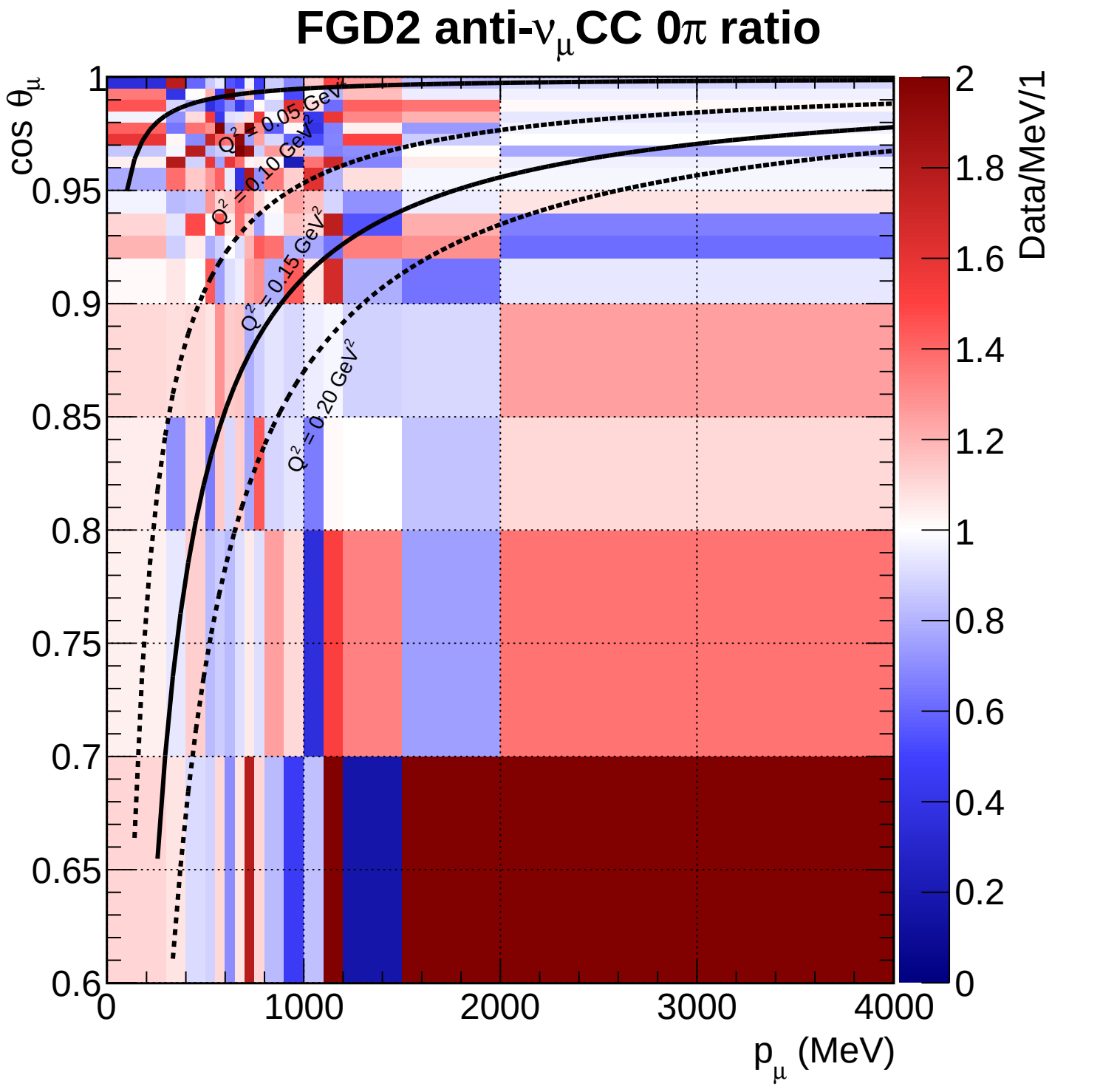

FGD1 anti-ν_μCC other data: 98.75
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Data/MeV/1
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2

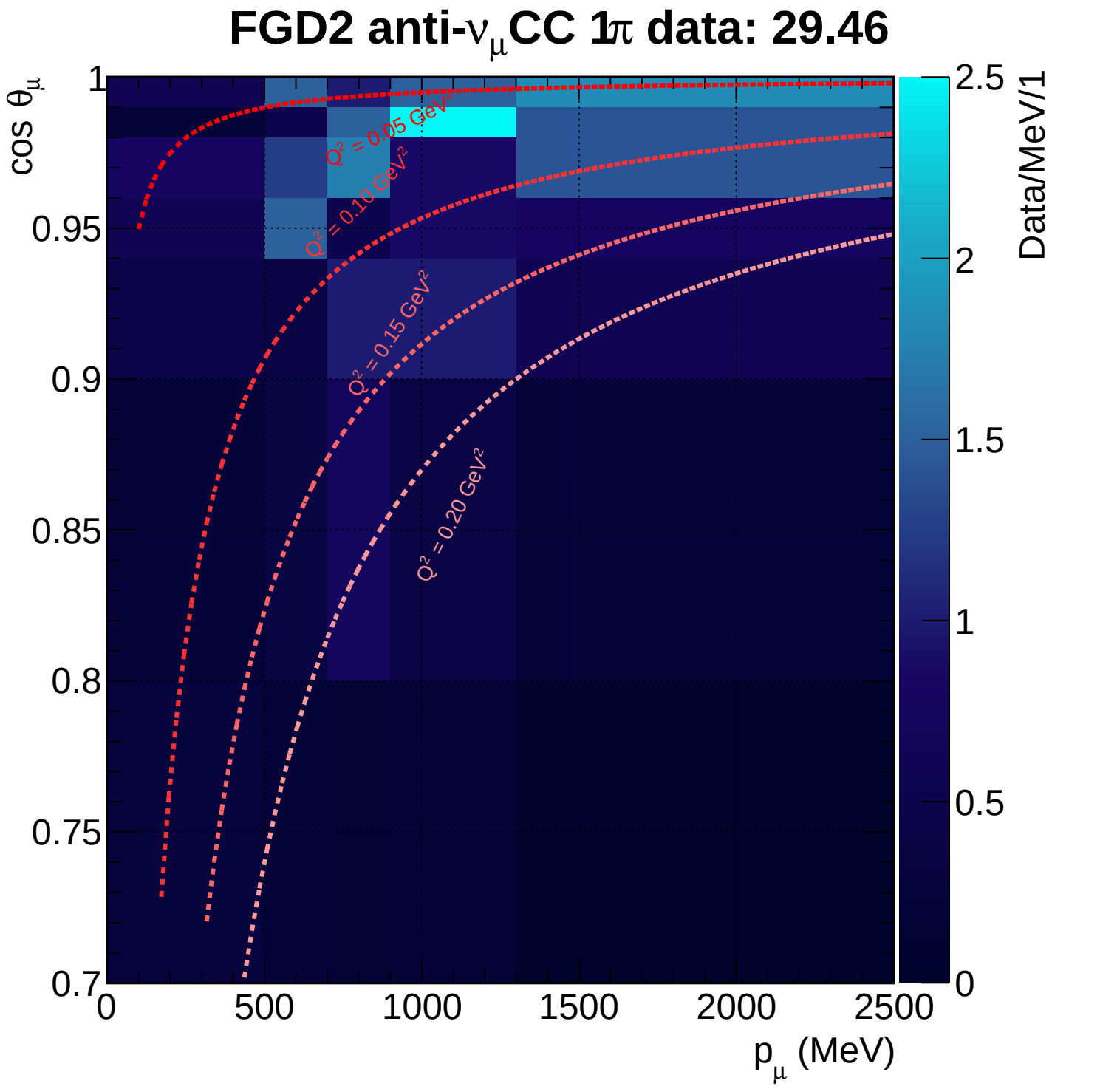

FGD1 anti-ν_μCC other MC: 88.3987
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
p_μ (MeV)
MC/MeV/1
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0

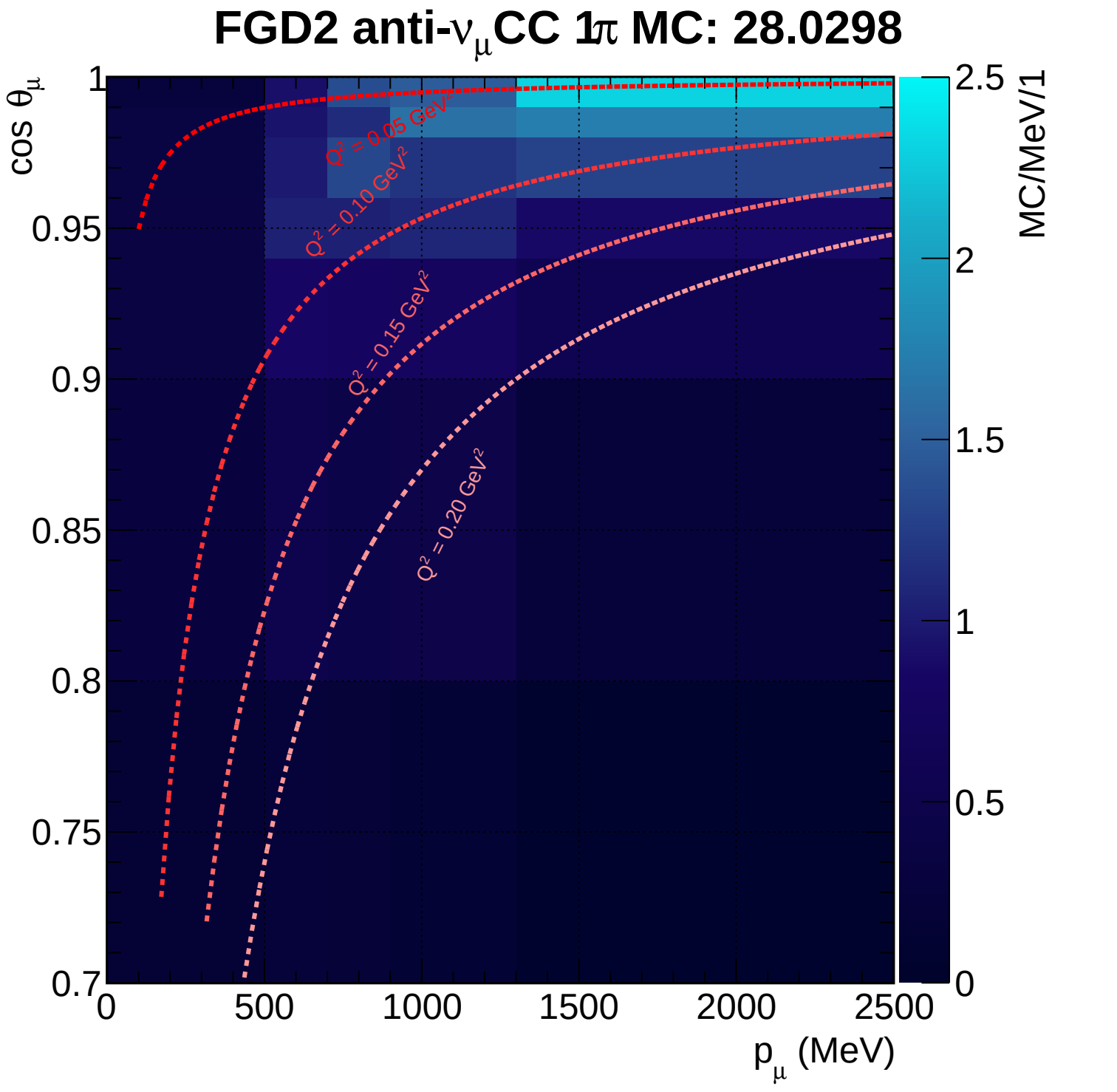

FGD1 anti-ν_μCC other ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

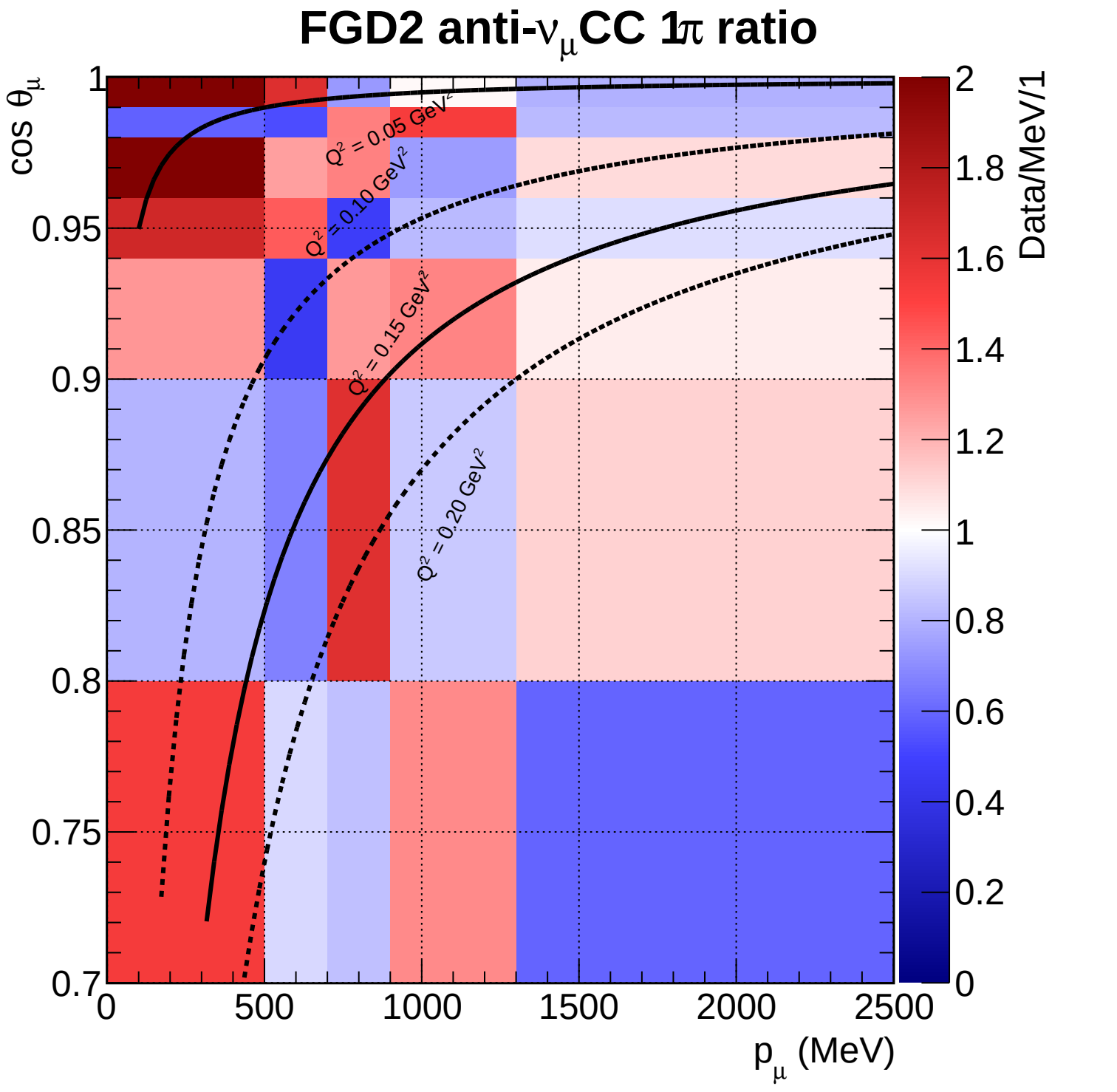

FGD2 anti-ν_μCC 0π data: 4504.46
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
70
60
50
40
30
20
10
0

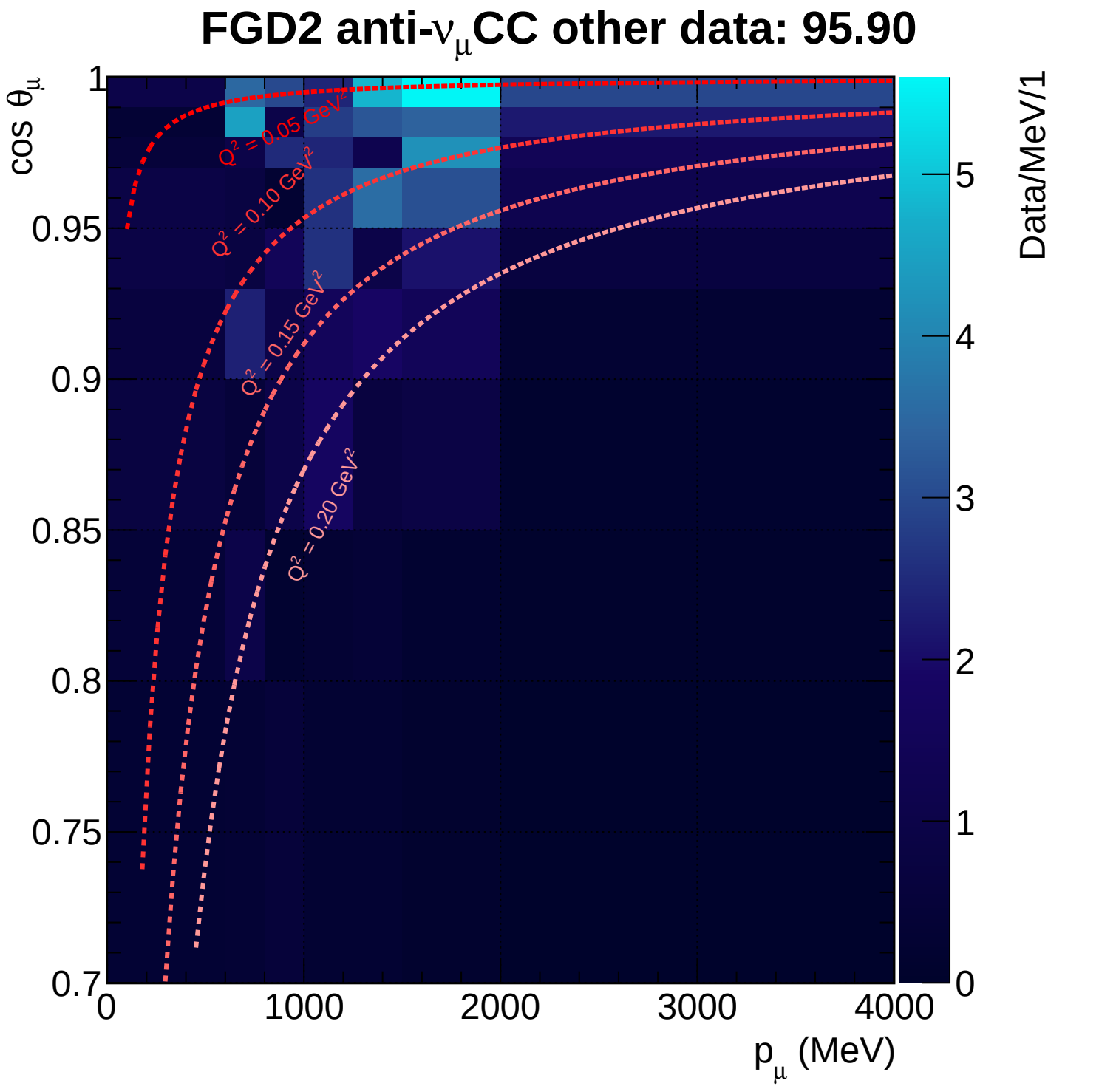

FGD2 anti-ν_μCC 0π MC: 4285.22
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
p_μ (MeV)
MC/MeV/1
70
60
50
40
30
20
10
0

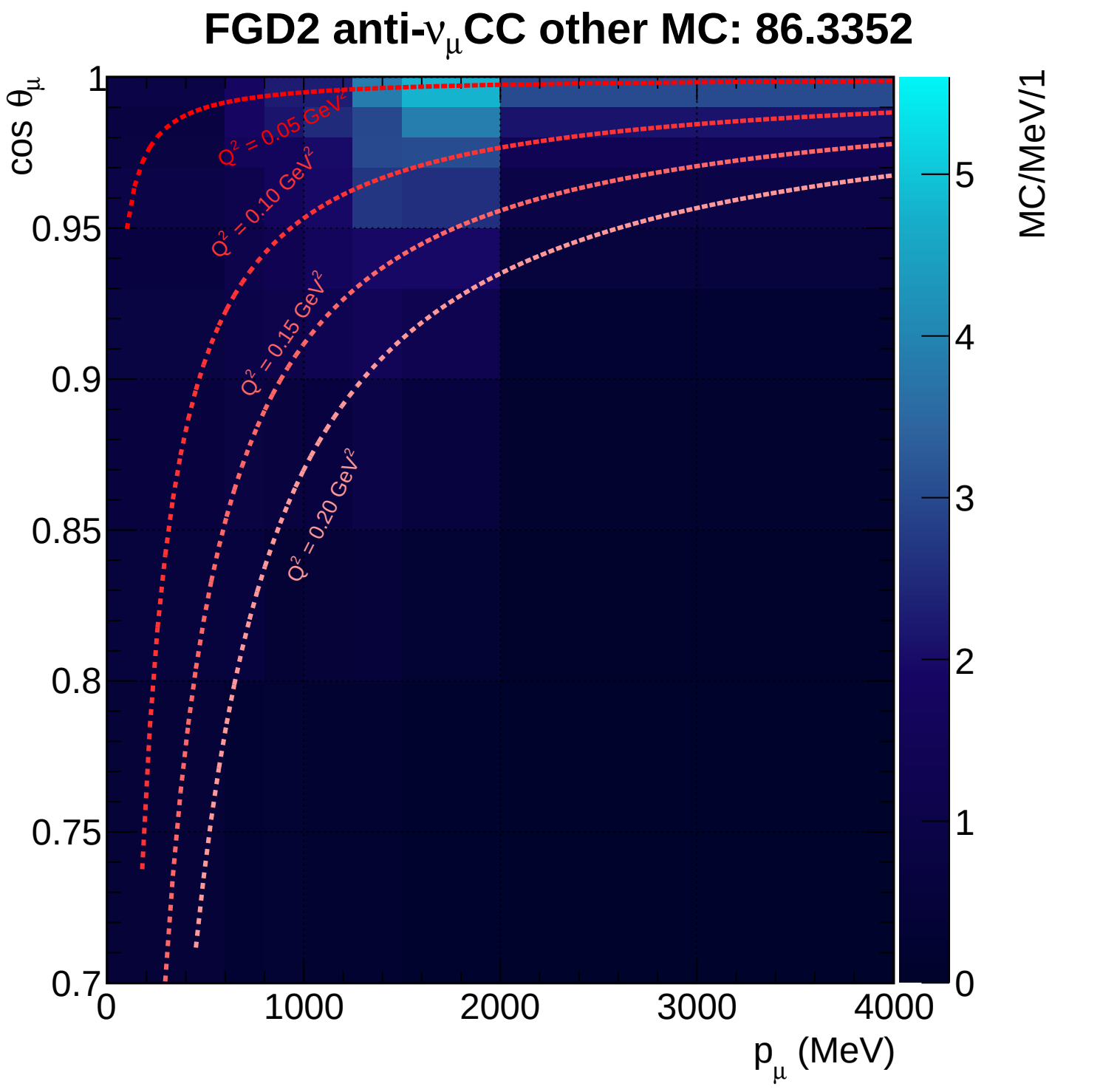

FGD2 anti-ν_μCC 0π ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

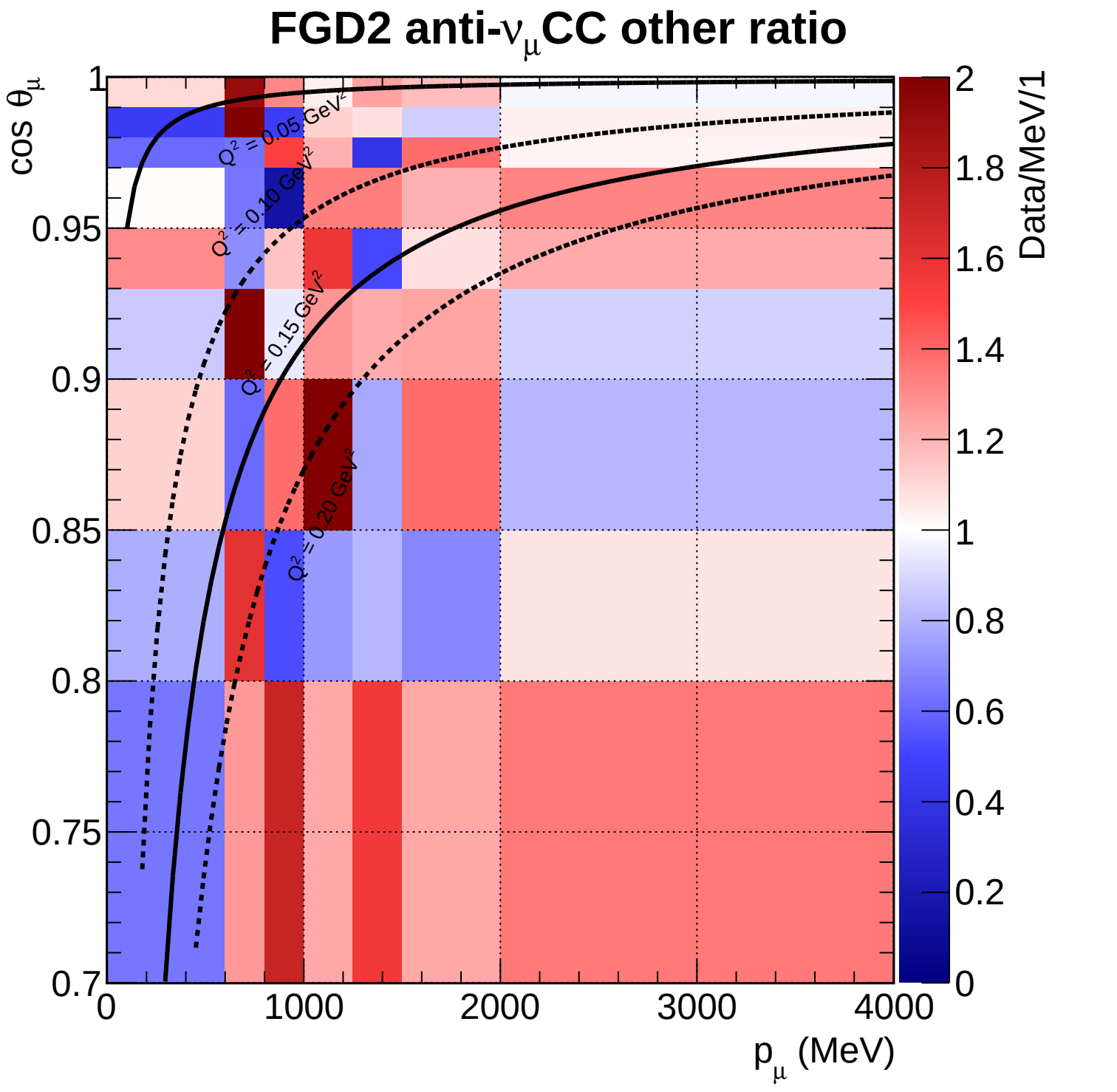

FGD2 anti-ν_μCC 1π data: 29.46
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
500
1000
1500
2000
2500
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2.5
2
1.5
1
0.5
0

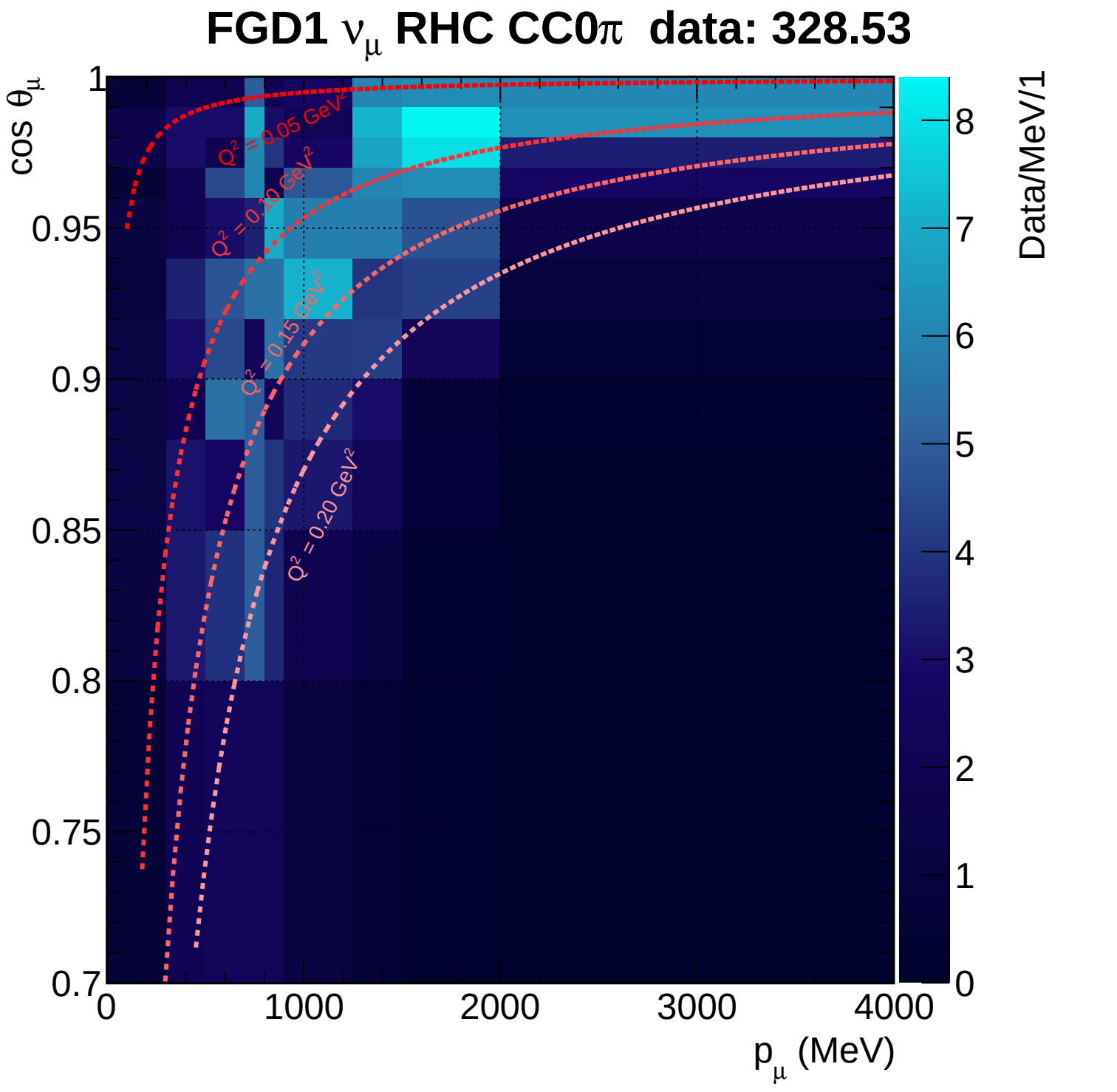

FGD2 anti-ν_μCC 1π MC: 28.0298
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
500
1000
1500
2000
2500
p_μ (MeV)
MC/MeV/1
2.5
2
1.5
1
0.5
0

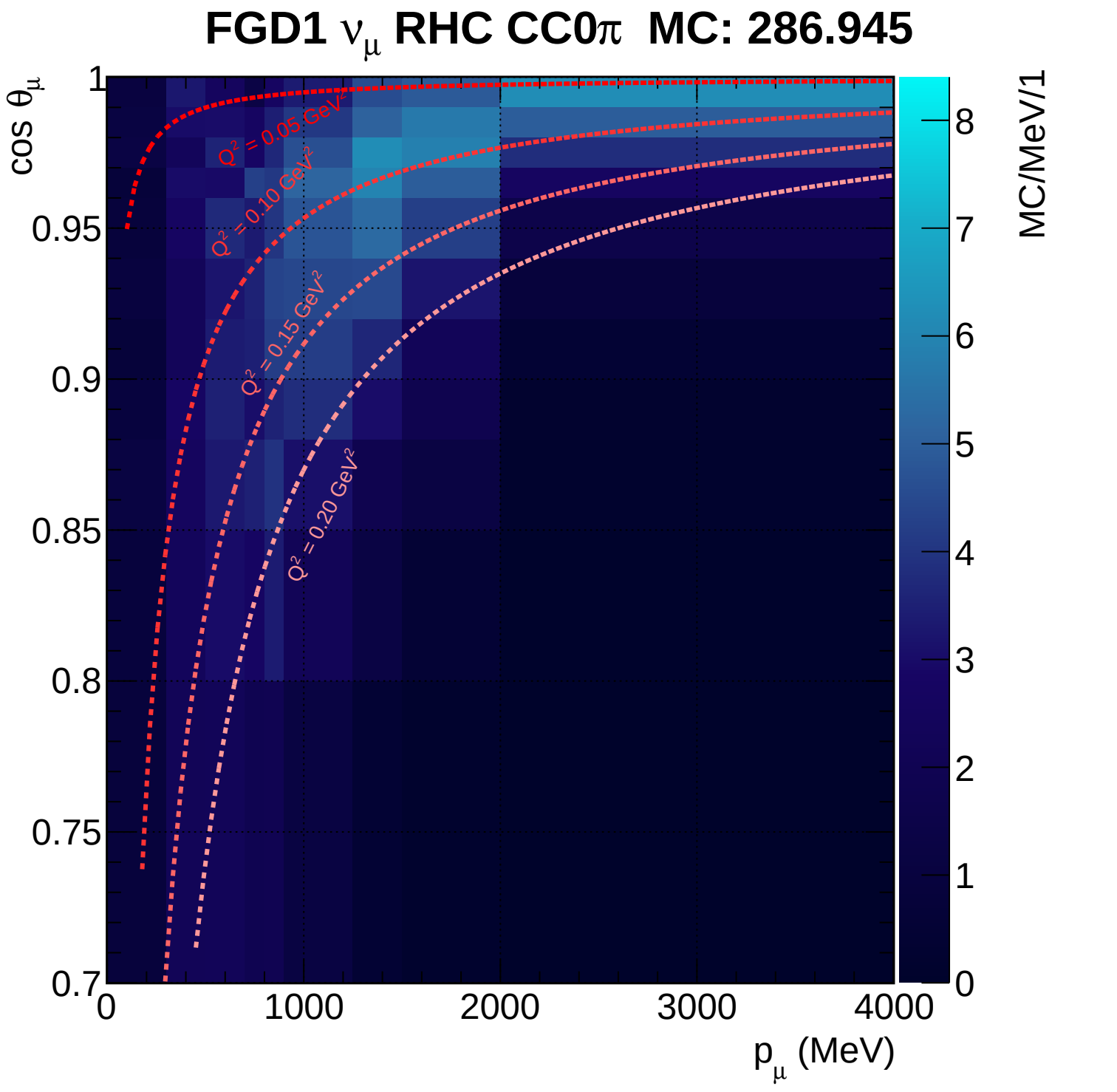

FGD2 anti-νμCC 1π ratio
cos θμ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
500
1000
1500
2000
2500
pμ (MeV)
Q² = 0.05 GeV²
Q² = 0.10 GeV²
Q² = 0.15 GeV²
Q² = 0.20 GeV²
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

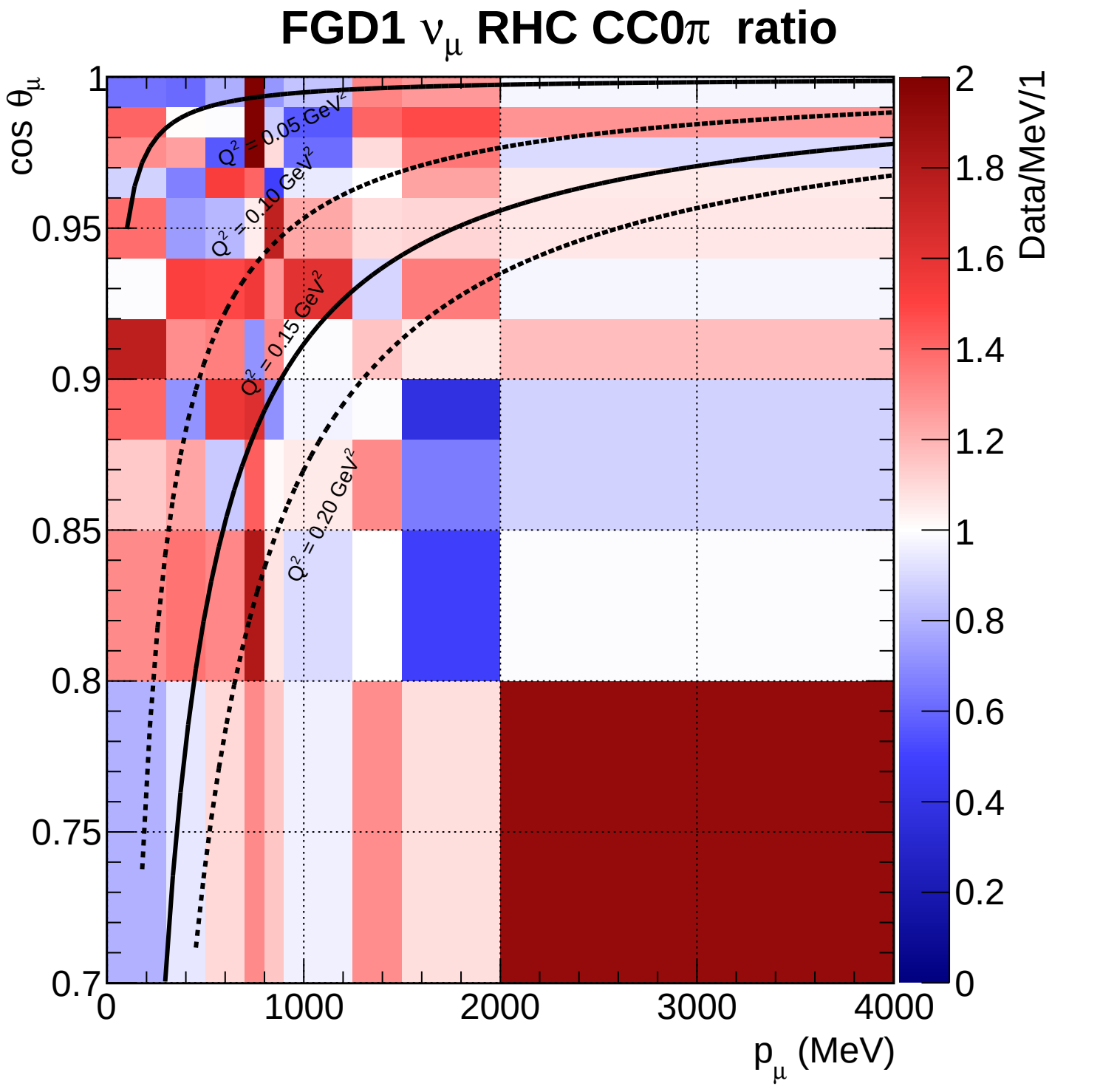

FGD2 anti-ν_μCC other data: 95.90
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
5
4
3
2
1
0

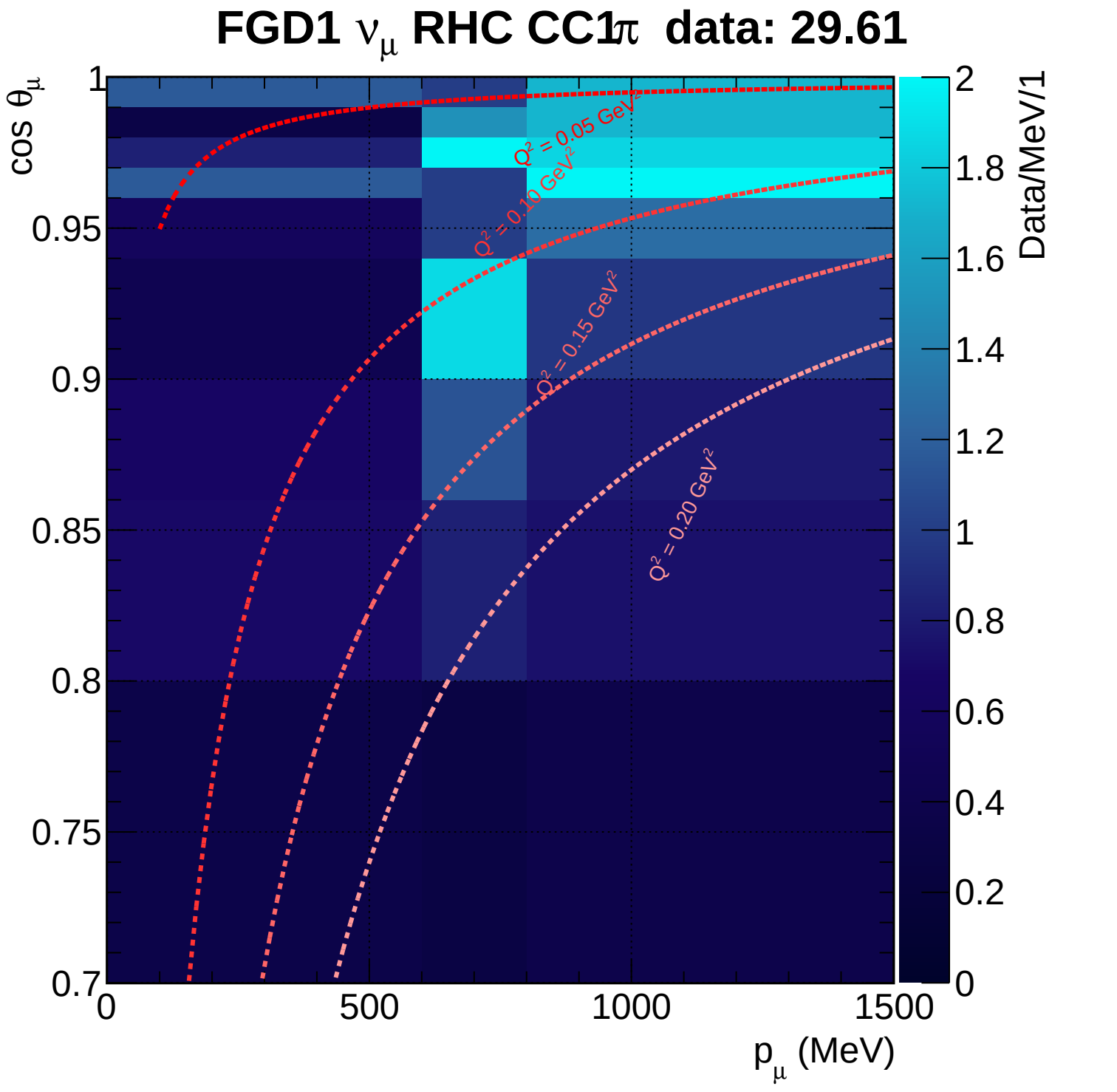

FGD2 anti-ν_μCC other MC: 86.3352
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
MC/MeV/1
5
4
3
2
1
0

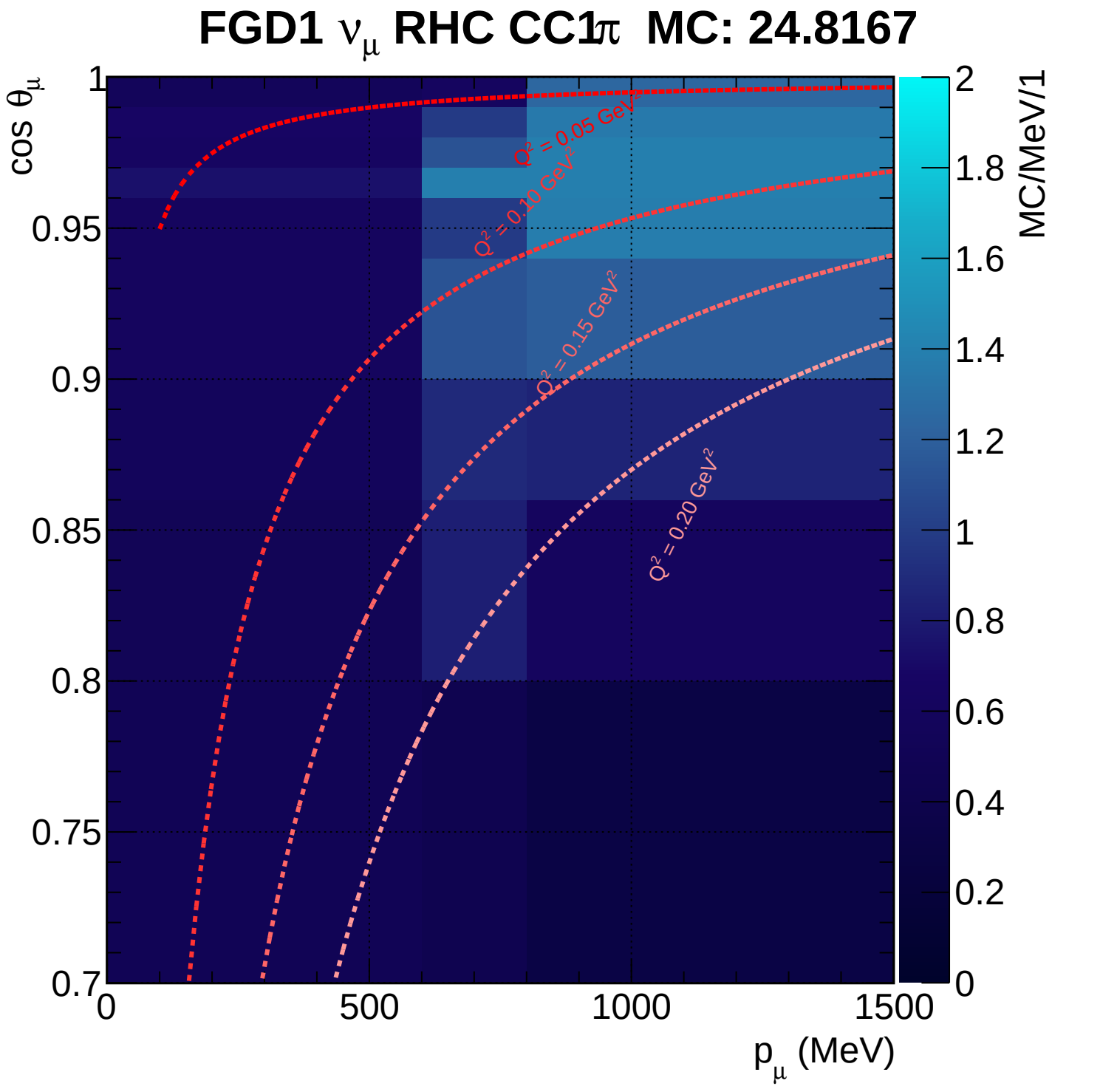

FGD2 anti-ν_μCC other ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

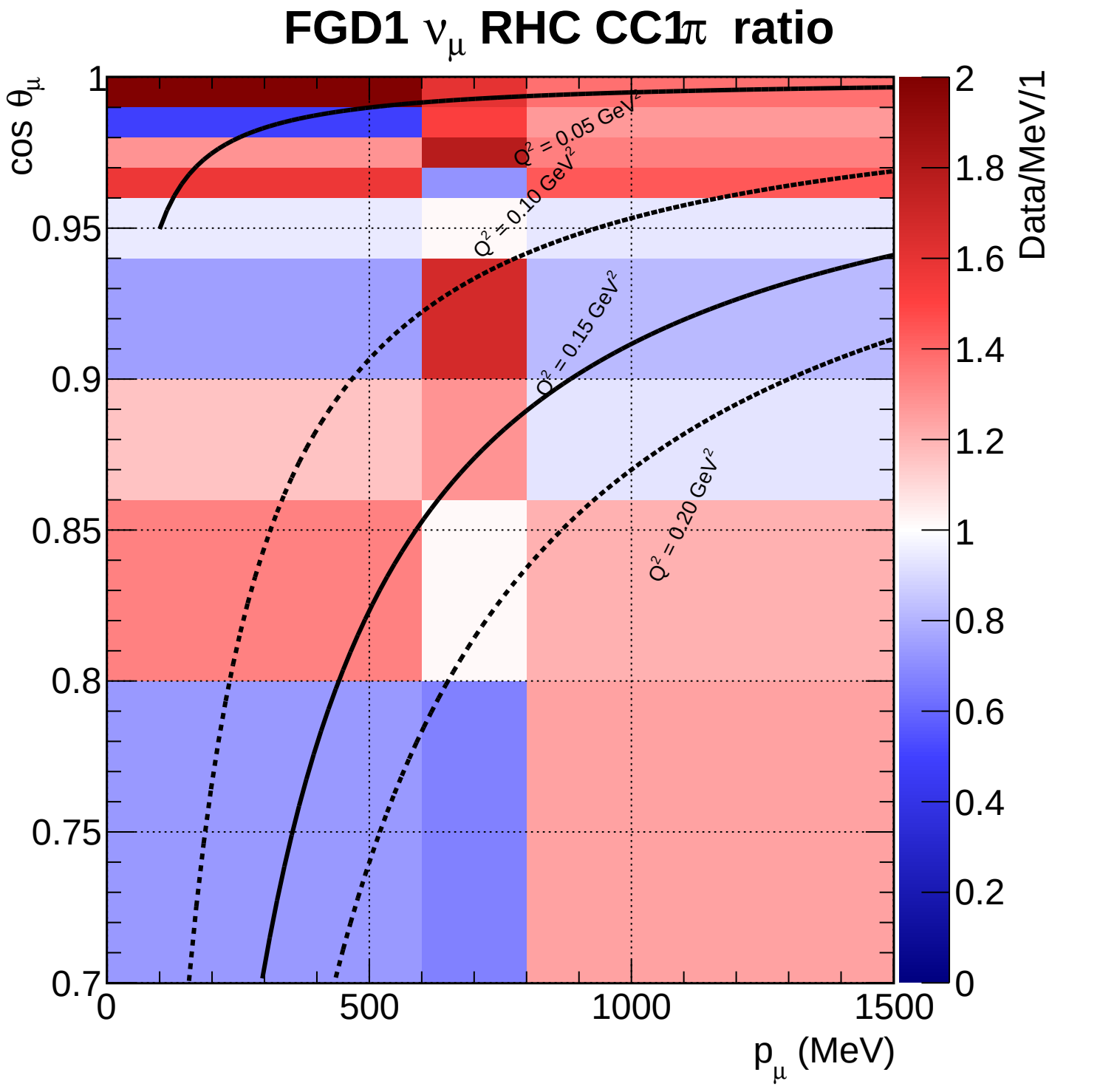

FGD1 ν_μ RHC CC0π data: 328.53
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
0
1
2
3
4
5
6
7
8

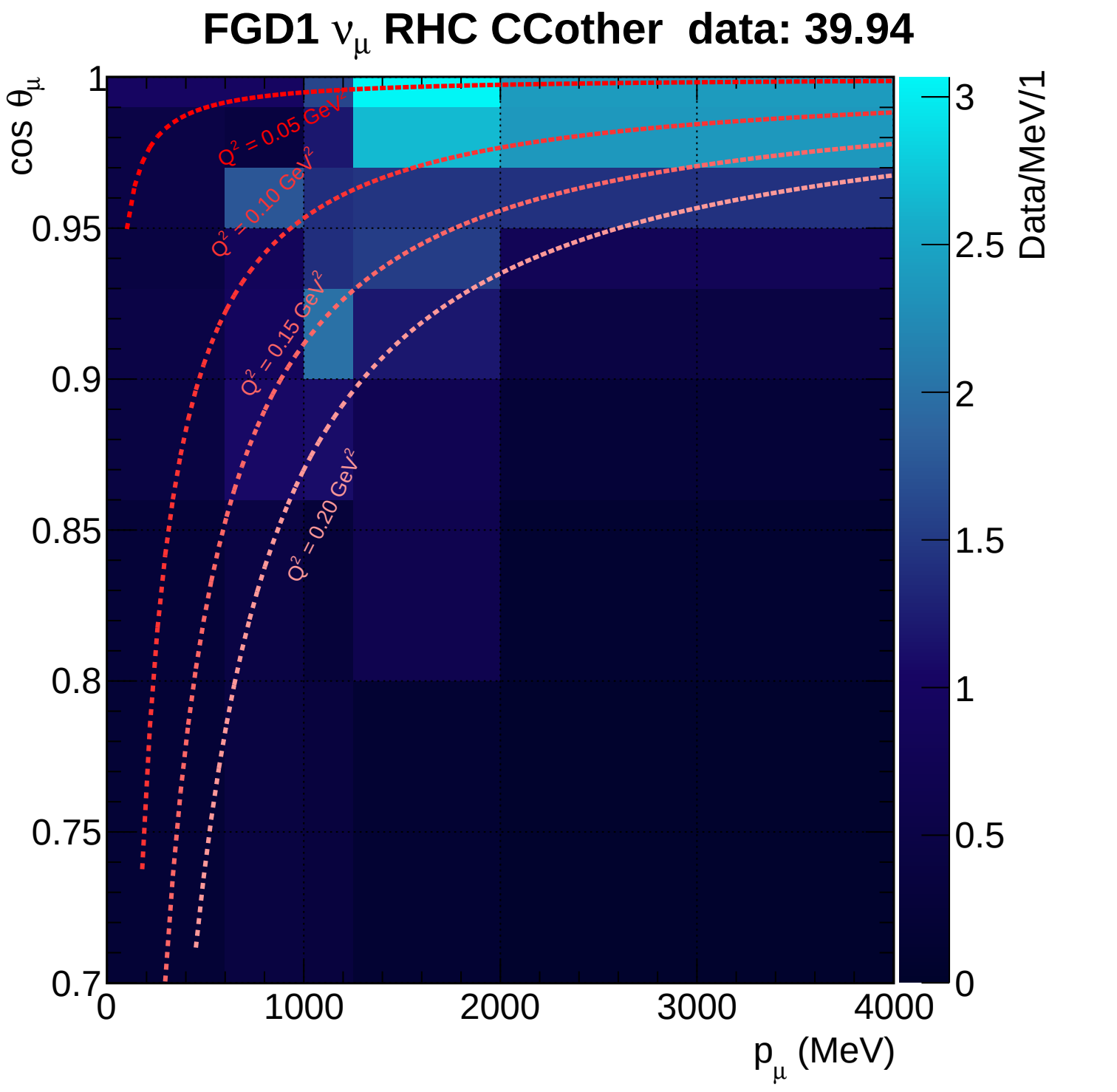

FGD1 ν_μ RHC CC0π MC: 286.945
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
MC/MeV/1
0
1
2
3
4
5
6
7
8

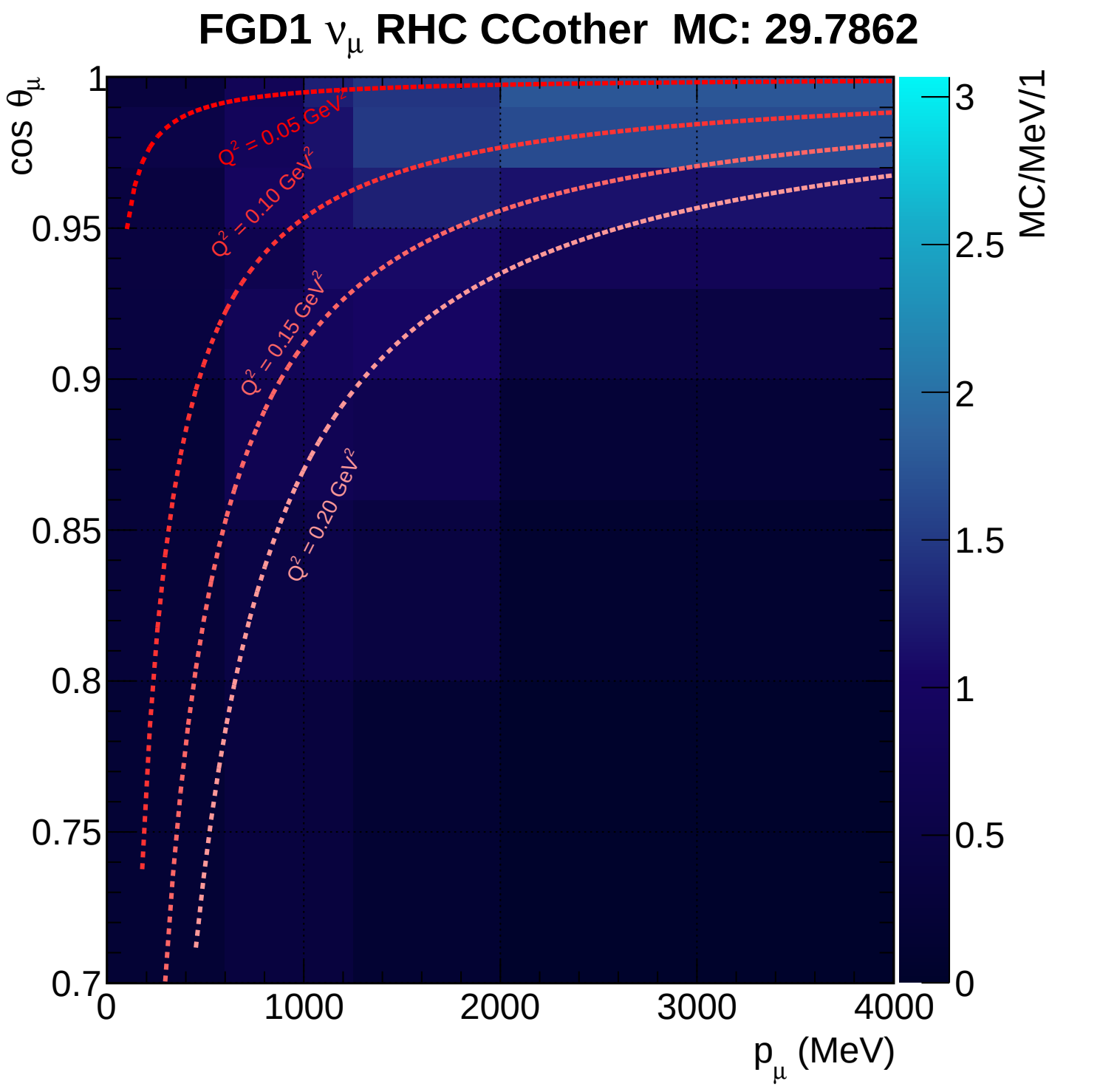

FGD1 ν_μ RHC CC0π ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

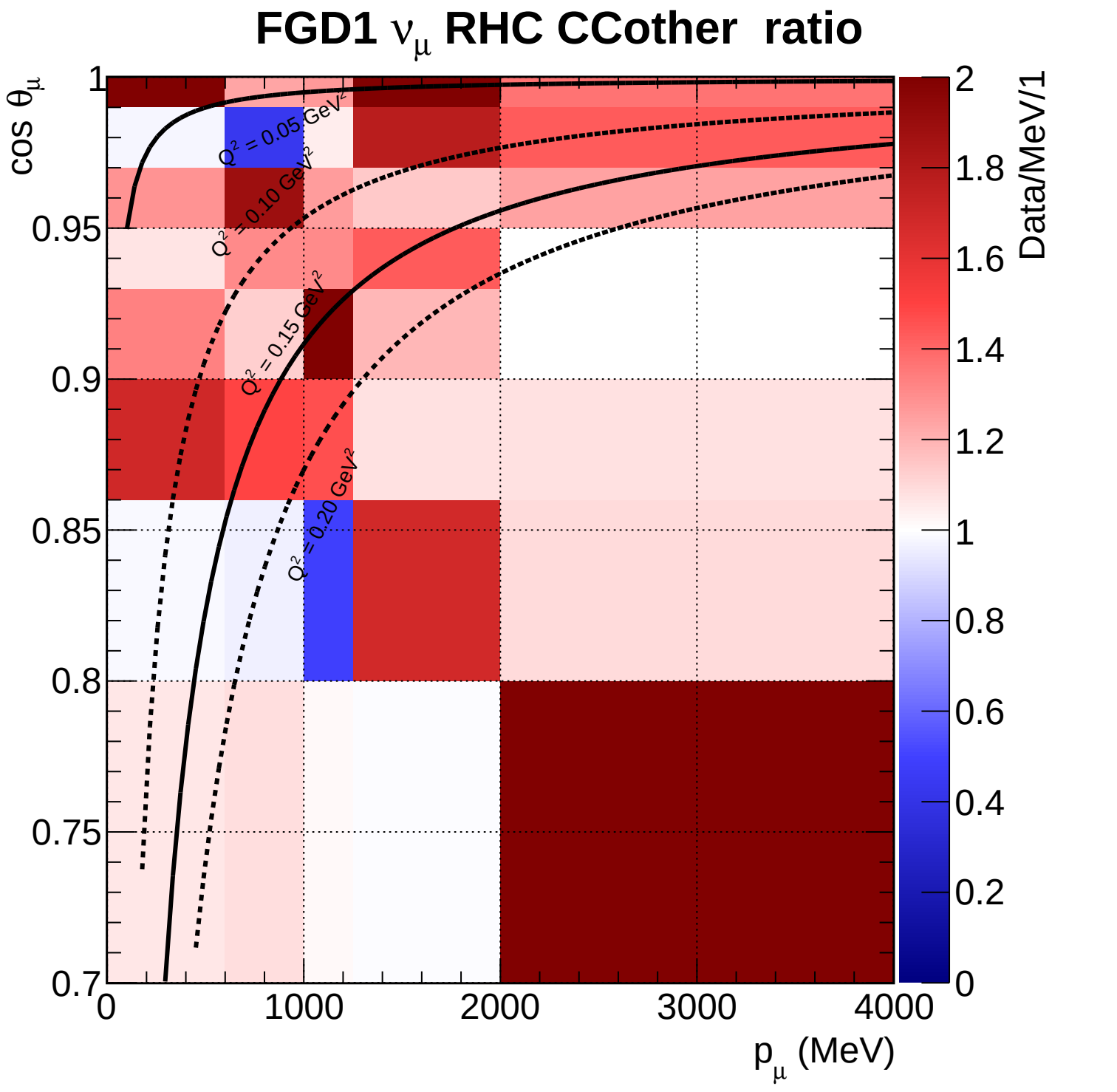

FGD1 ν_μ RHC CC1π data: 29.61
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
500
1000
1500
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

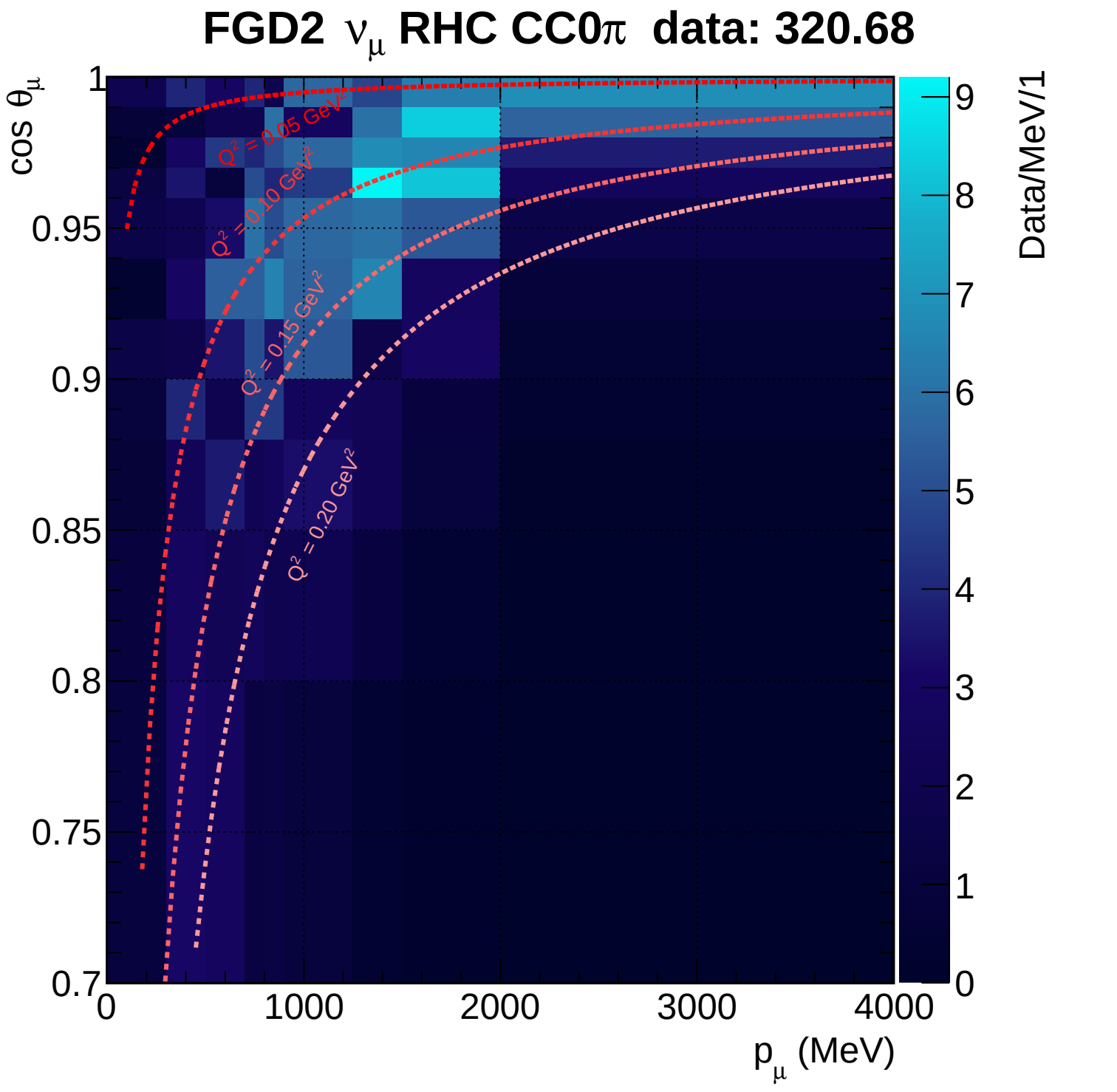

FGD1 ν_μ RHC CC1π MC: 24.8167
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
500
1000
1500
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
MC/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

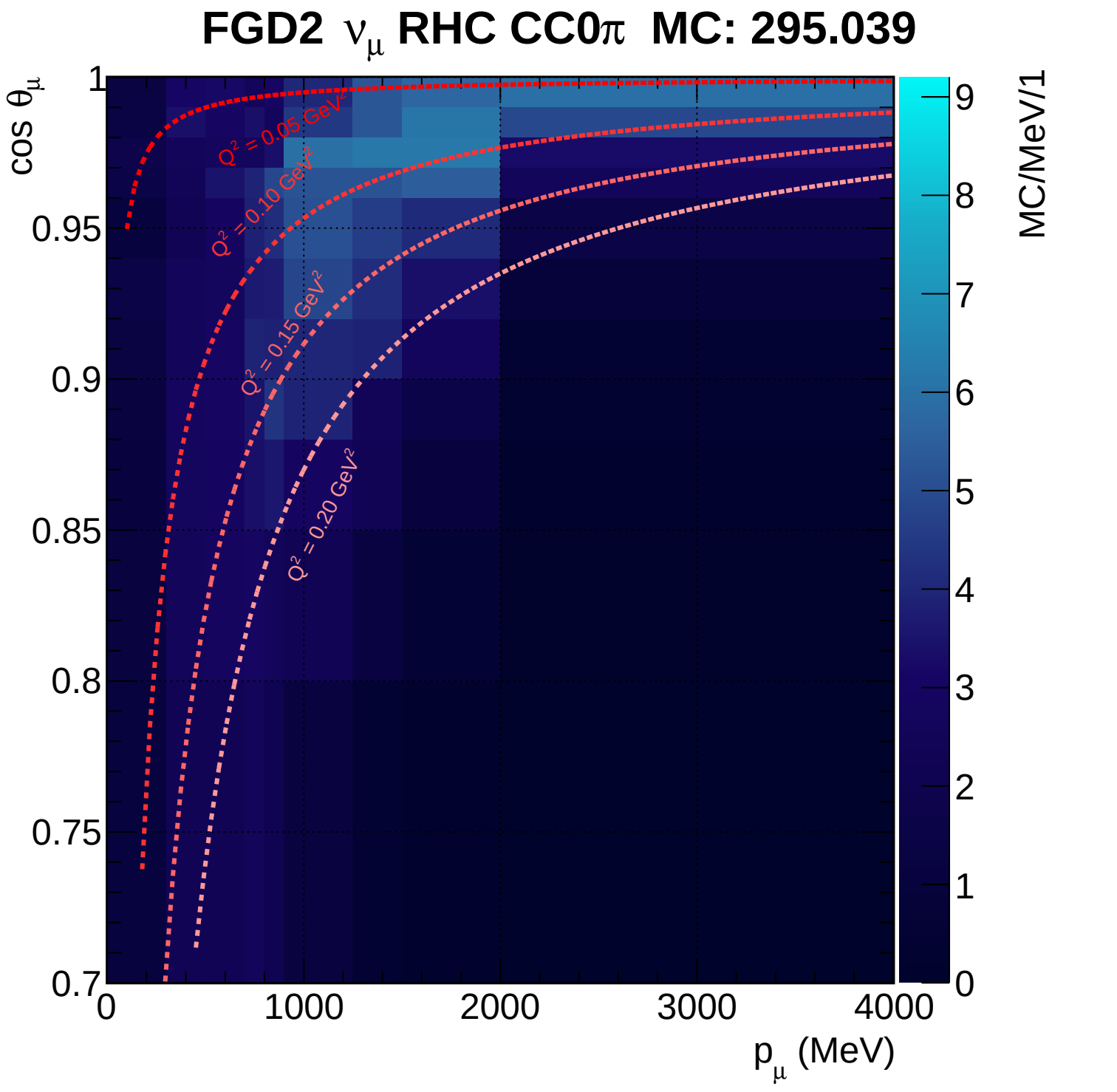

FGD1 ν_μ RHC CC1π ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
500
1000
1500
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

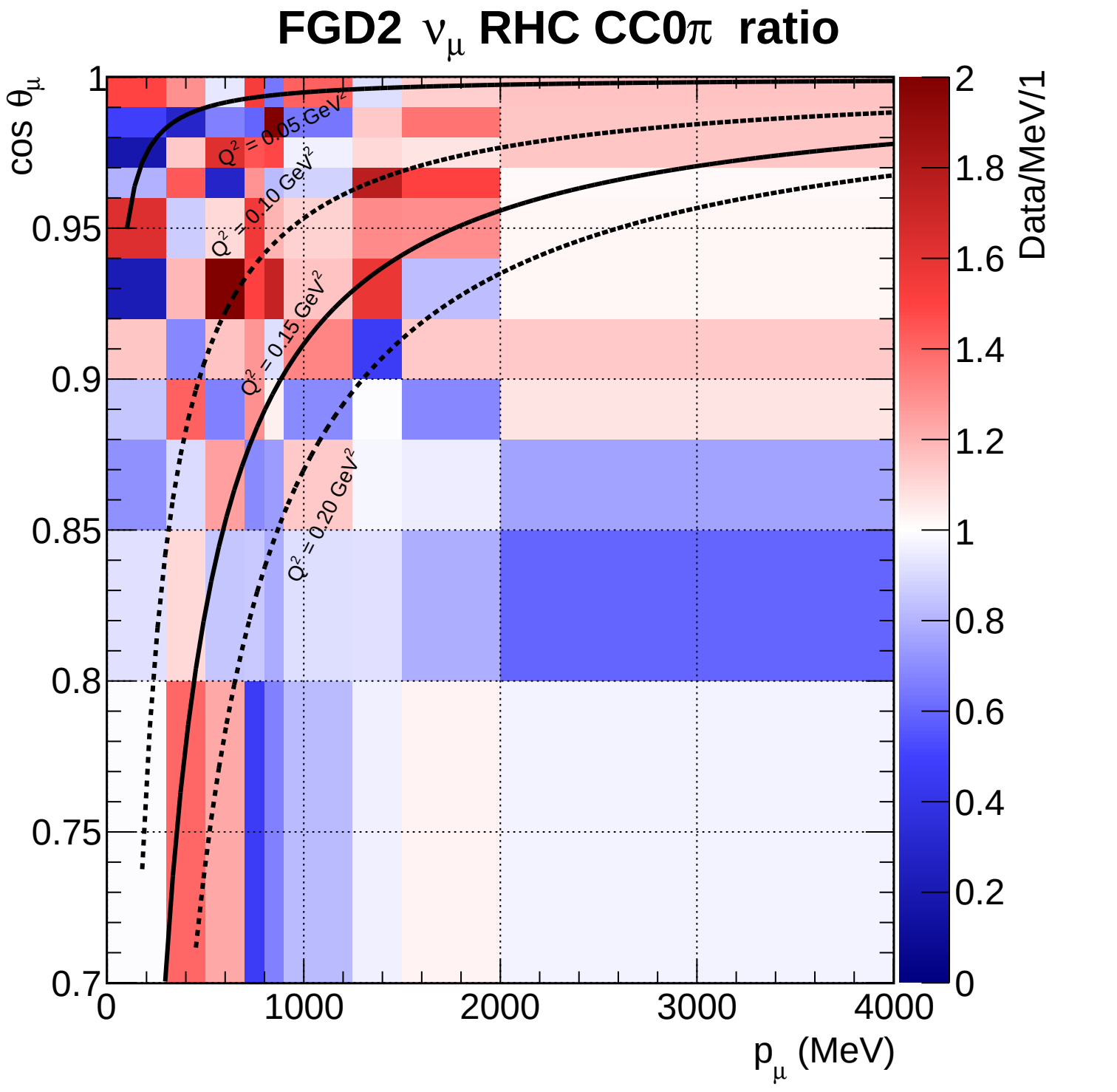

FGD1 ν_μ RHC CCother data: 39.94
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Data/MeV/1
3
2.5
2
1.5
1
0.5
0
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2

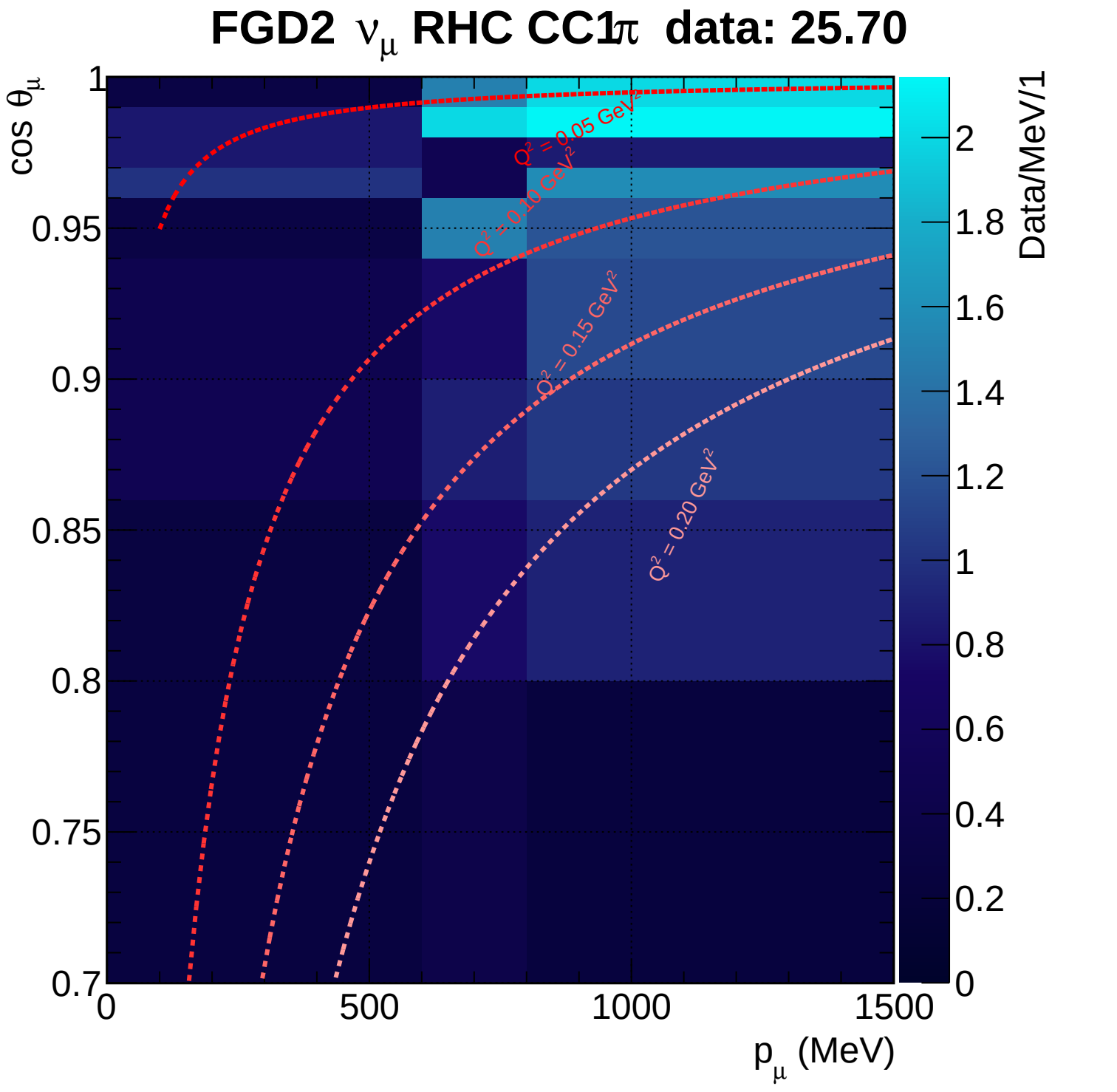

FGD1 ν_μ RHC CCother MC: 29.7862
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
p_μ (MeV)
MC/MeV/1
3
2.5
2
1.5
1
0.5
0

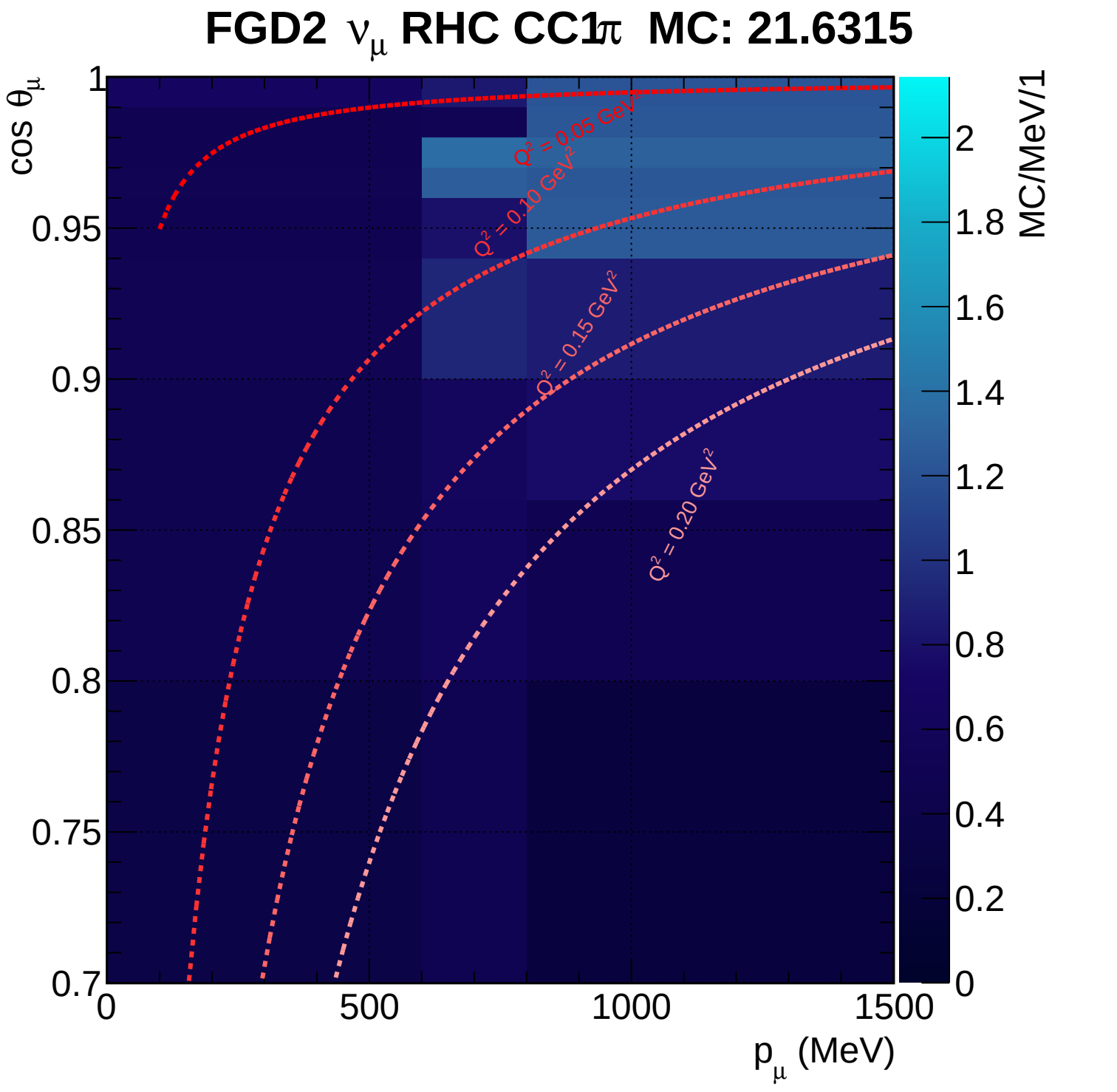

FGD1 ν_μ RHC CCother ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
p_μ (MeV)
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

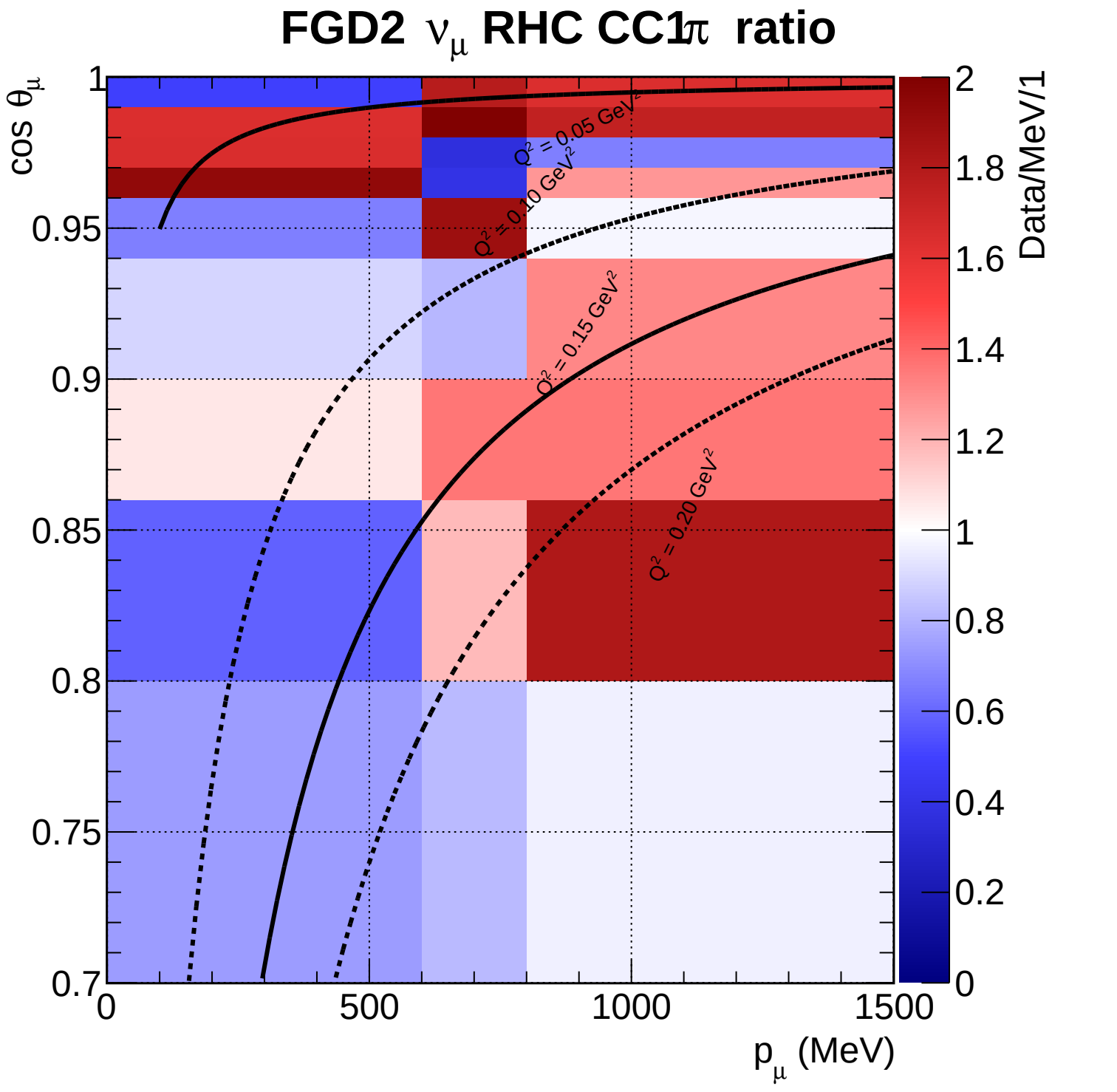

FGD2 ν_μ RHC CC0π data: 320.68
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
p_μ (MeV)
Data/MeV/1
9
8
7
6
5
4
3
2
1
0

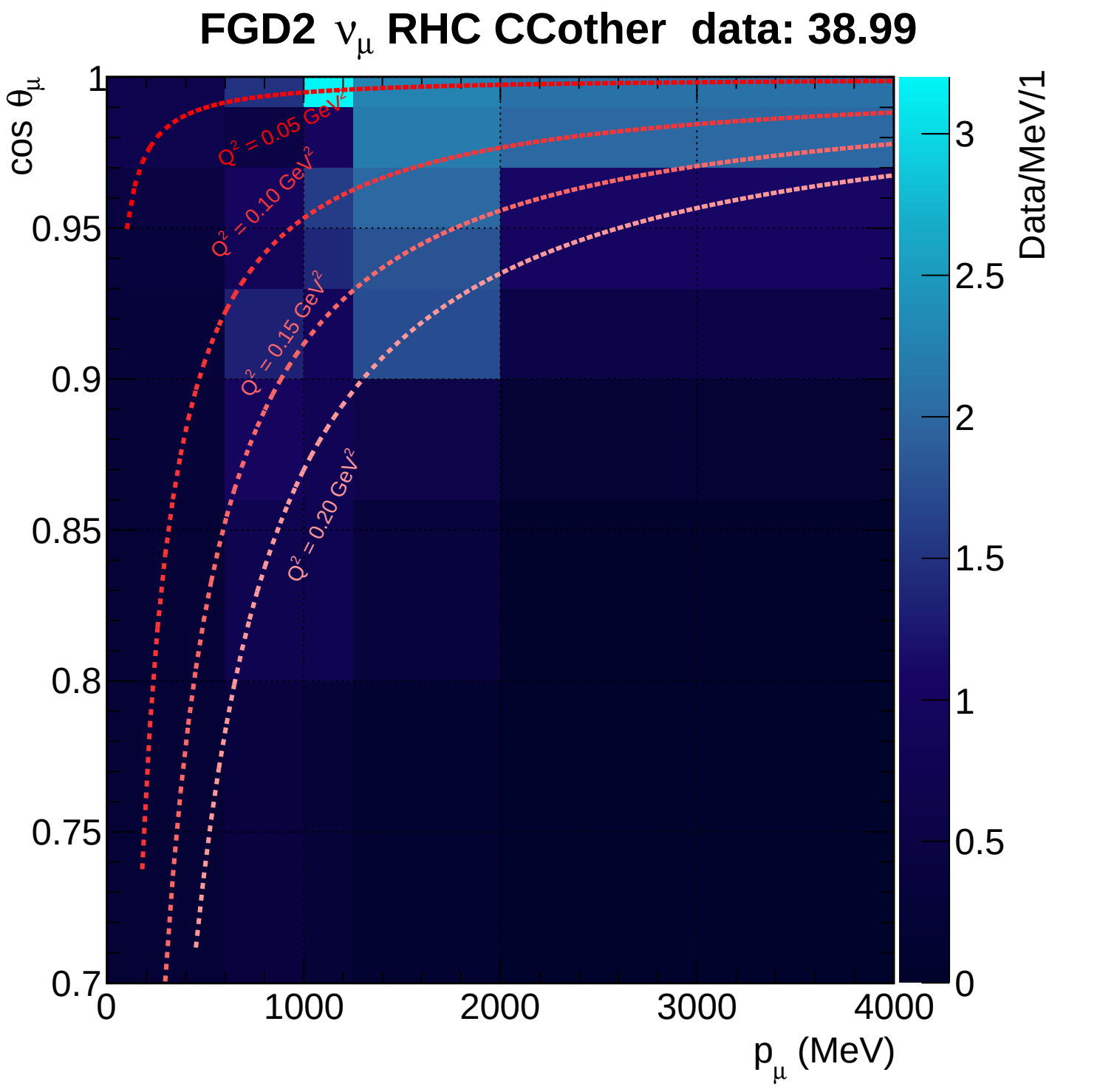

FGD2 ν_μ RHC CC0π MC: 295.039
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
0
1000
2000
3000
4000
p_μ (MeV)
MC/MeV/1
9
8
7
6
5
4
3
2
1
0

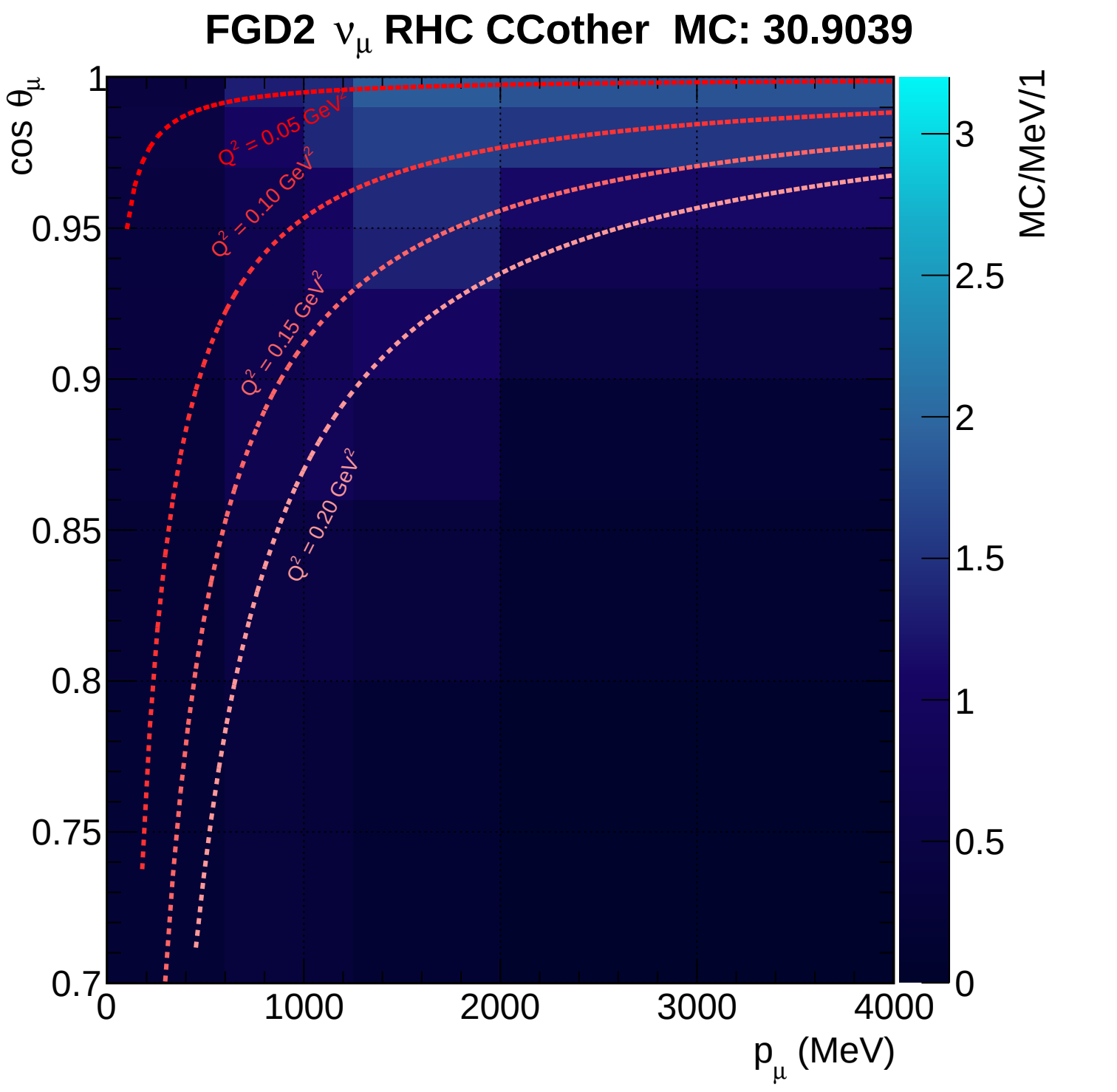

FGD2 ν_μ RHC CC0π ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

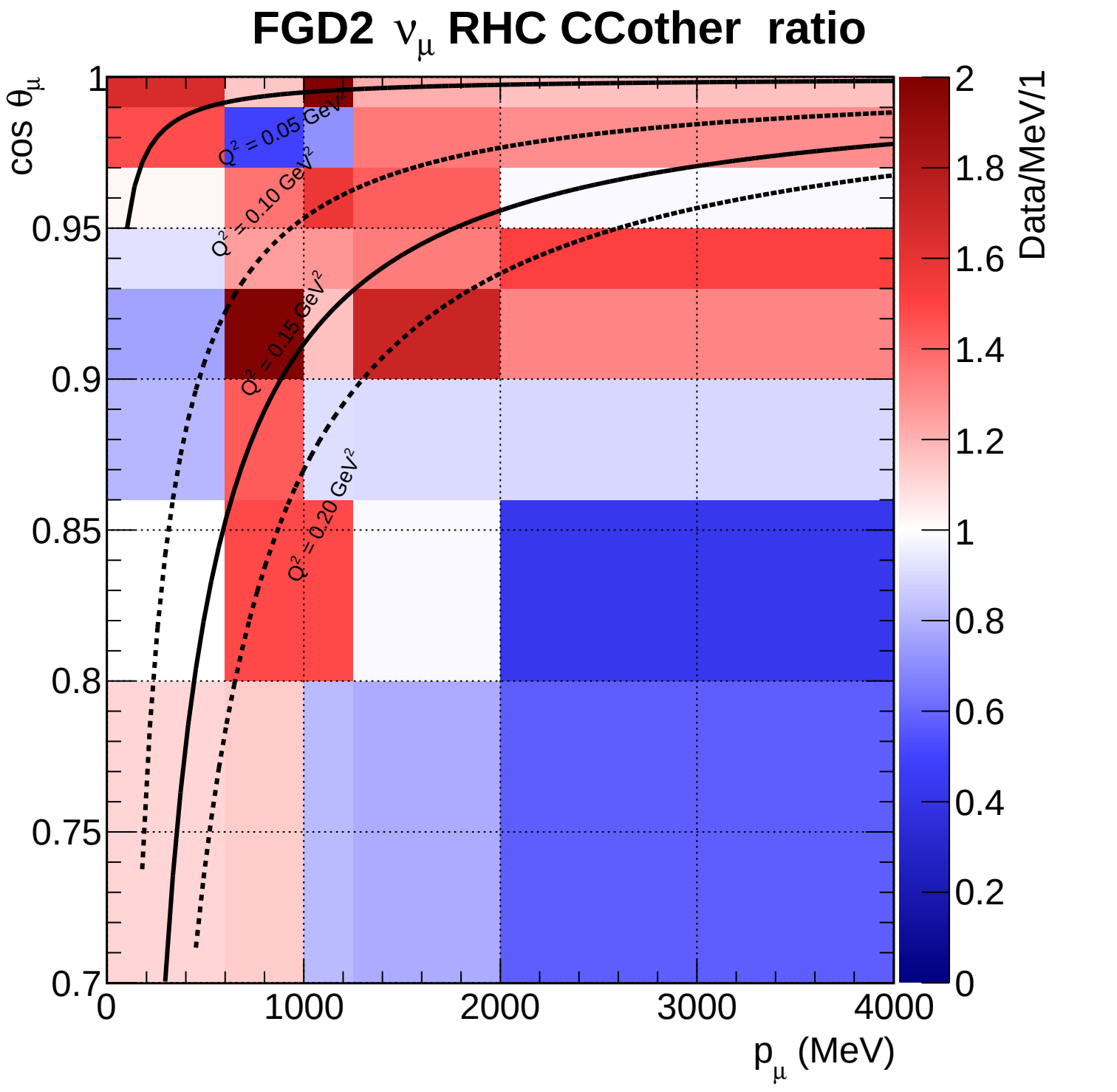

FGD2 ν_μ RHC CC1π data: 25.70
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
500
1000
1500
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

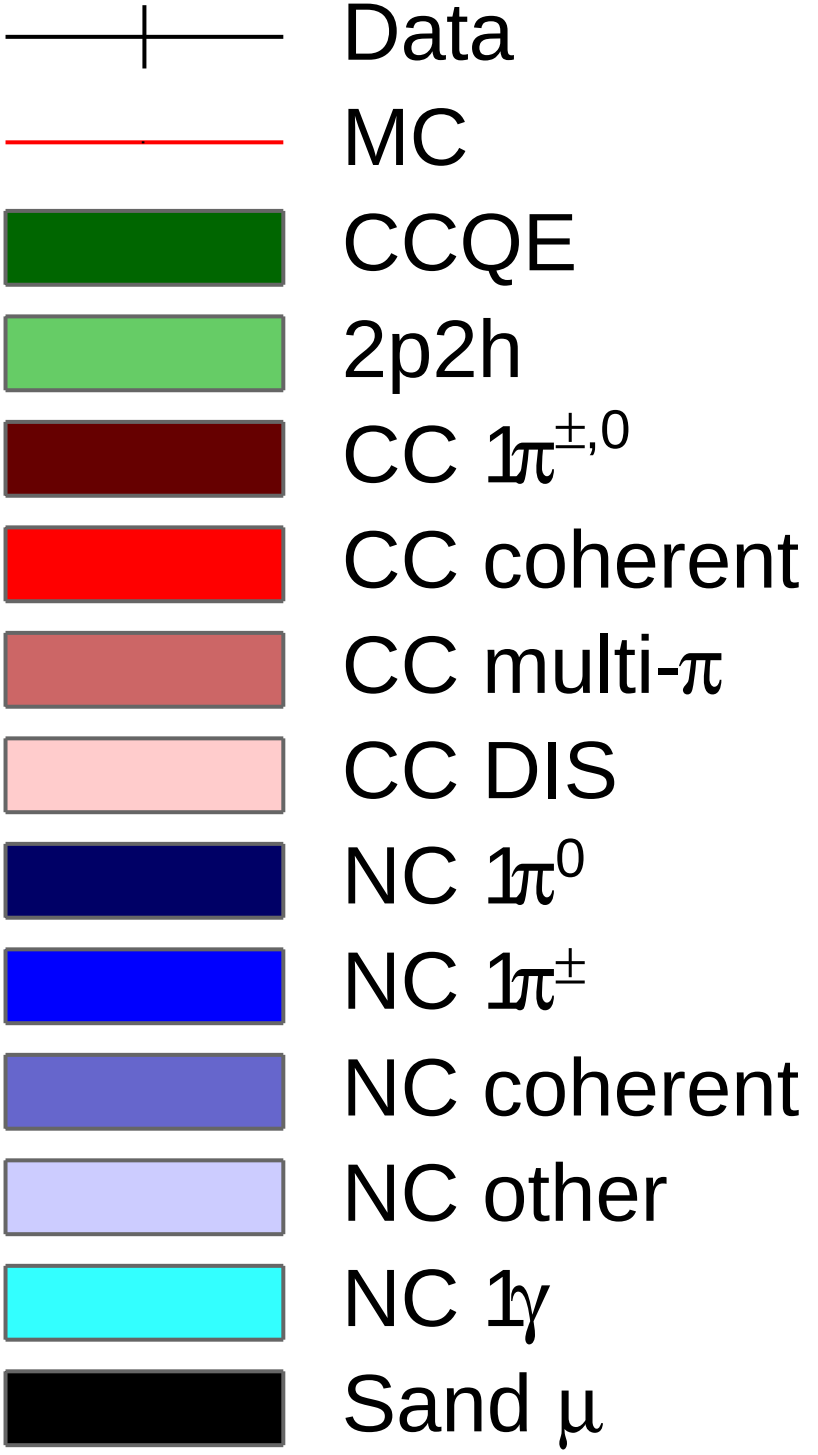

FGD2 ν_μ RHC CC1π MC: 21.6315
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
500
1000
1500
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
MC/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

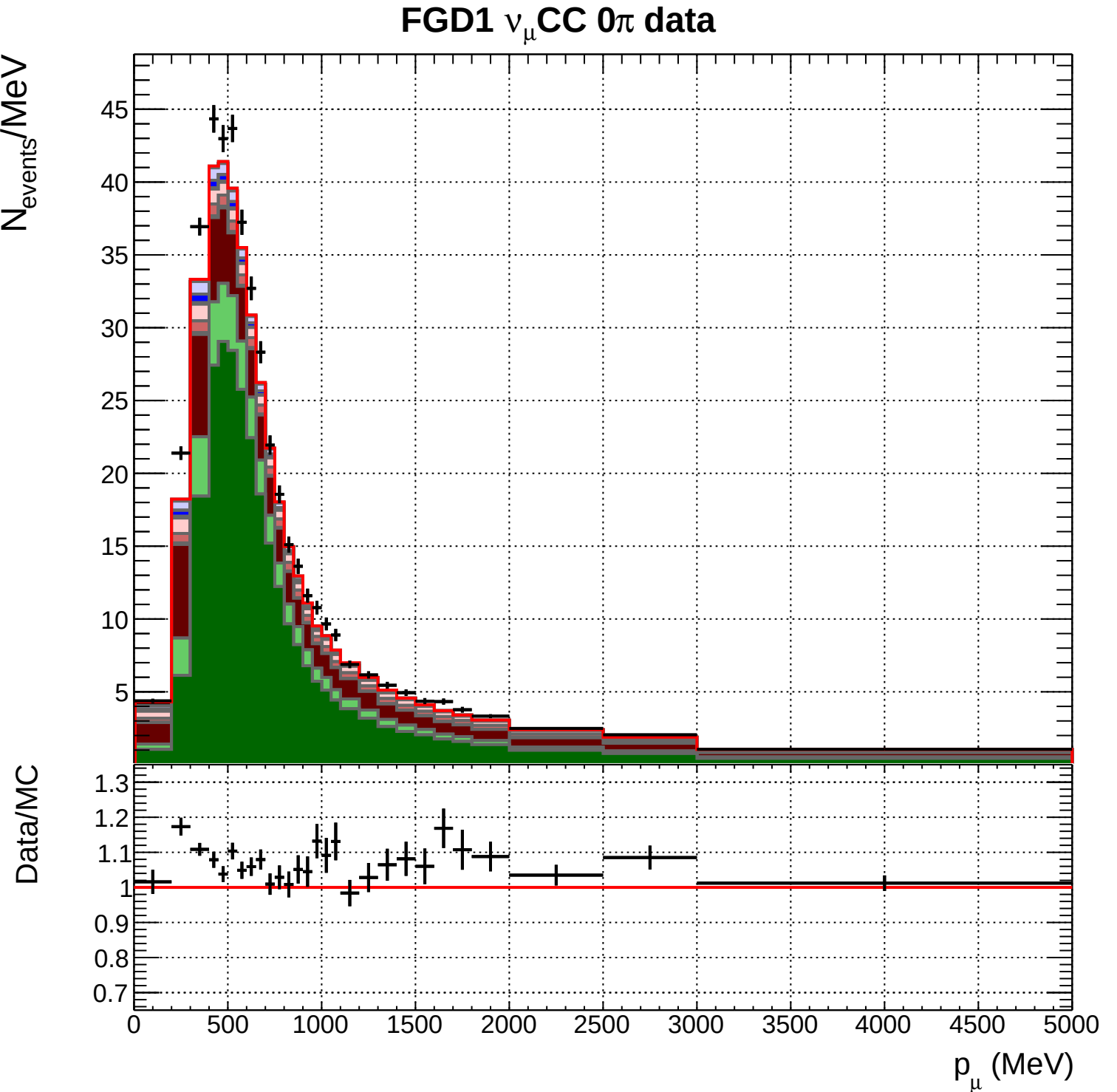

FGD2 ν_μ RHC CC1π ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
500
1000
1500
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

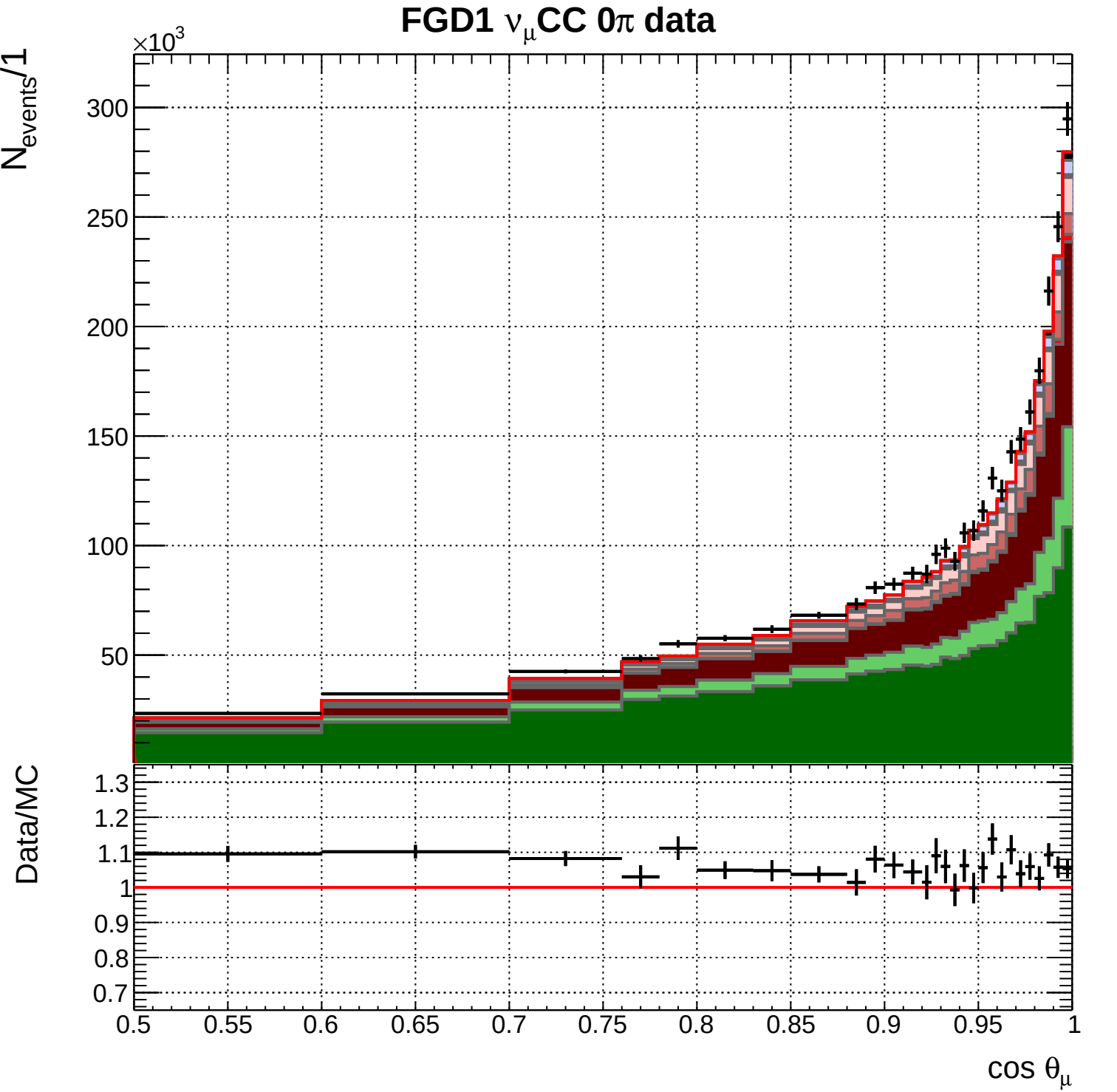

FGD2 ν_μ RHC CCother data: 38.99
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
3
2.5
2
1.5
1
0.5
0

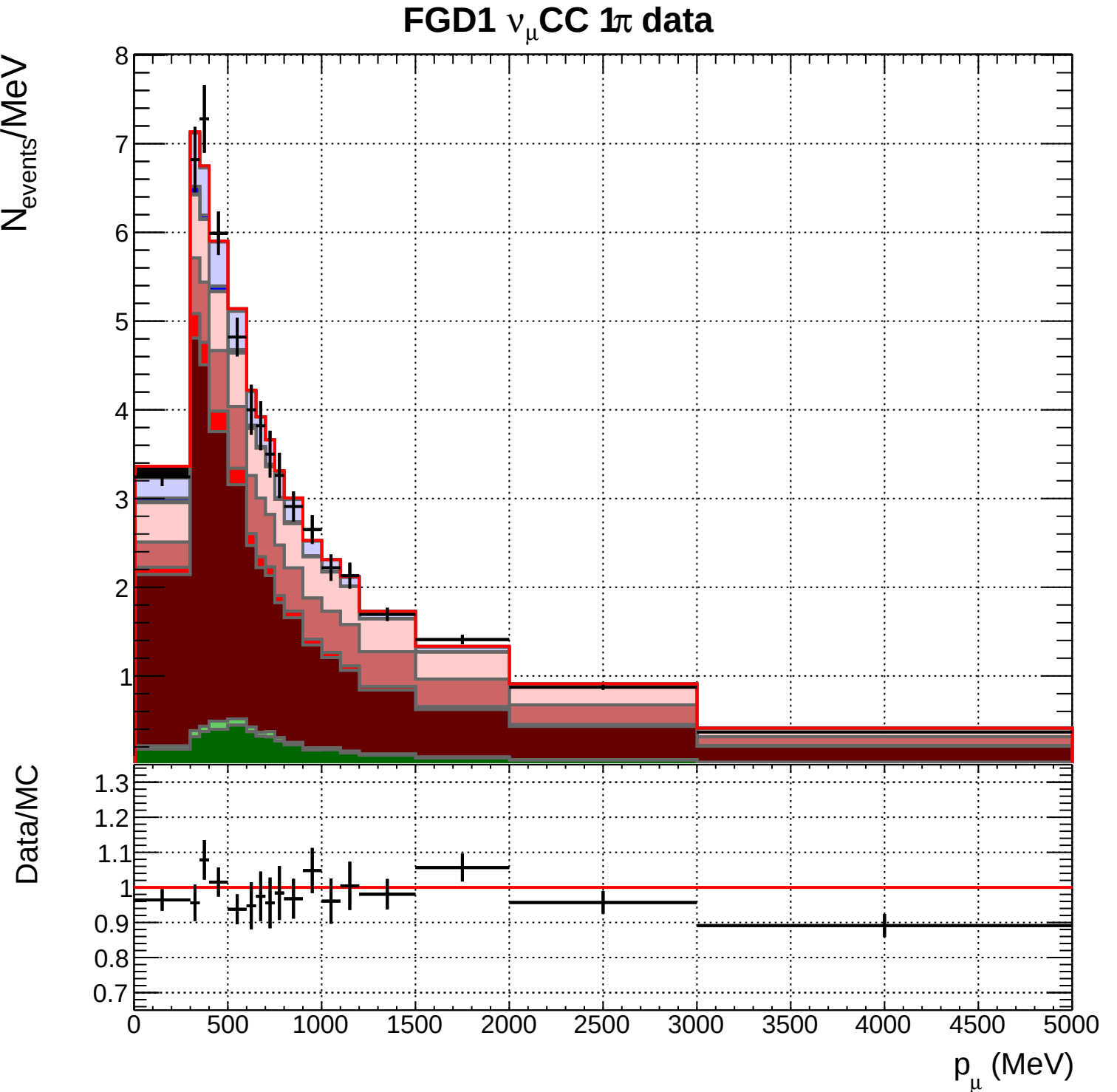

FGD2 ν_μ RHC CCother MC: 30.9039
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
MC/MeV/1
3
2.5
2
1.5
1
0.5
0

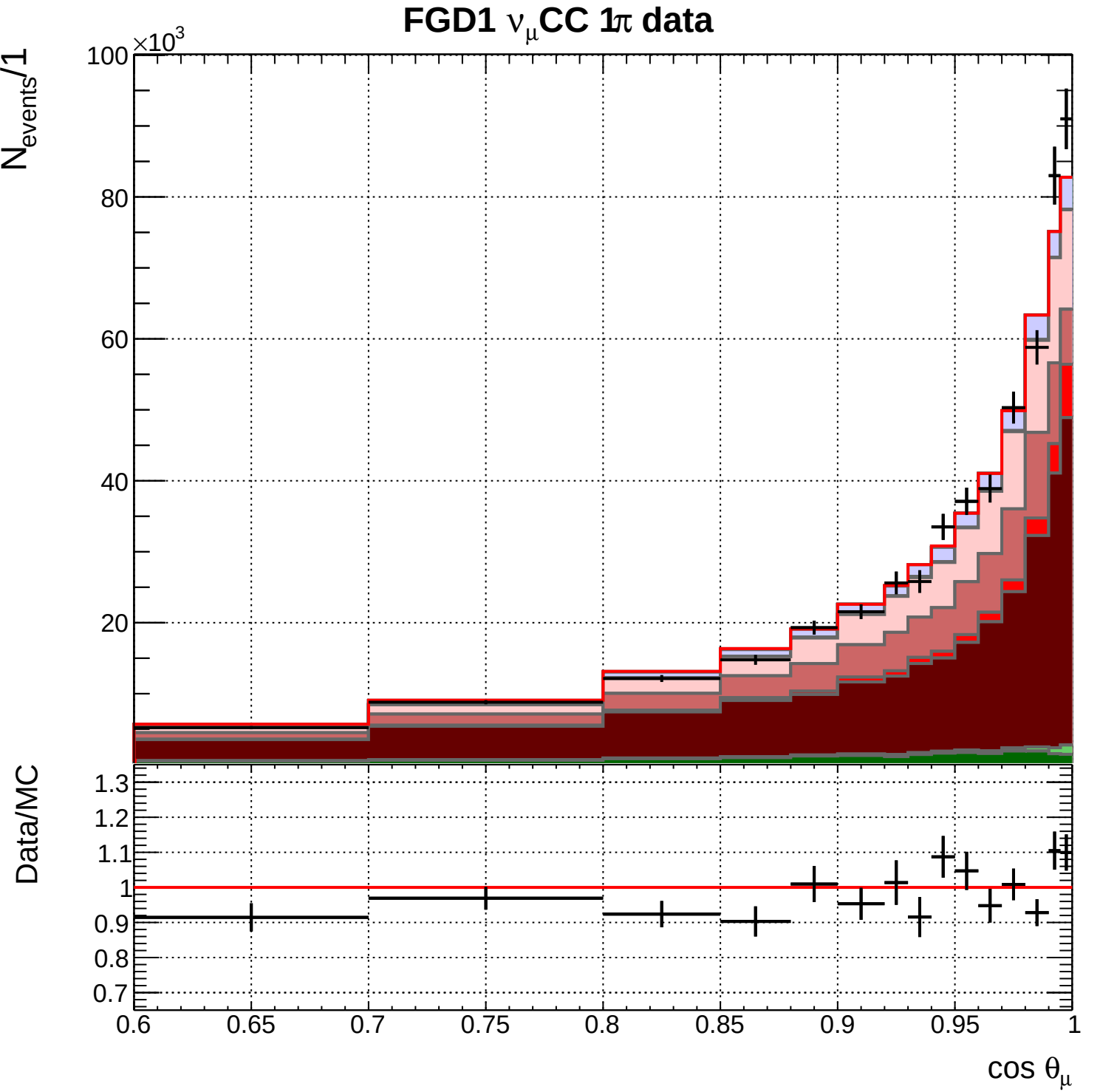

FGD2 ν_μ RHC CCother ratio
cos θ_μ
1
0.95
0.9
0.85
0.8
0.75
0.7
0
1000
2000
3000
4000
p_μ (MeV)
Q^2 = 0.05 GeV^2
Q^2 = 0.10 GeV^2
Q^2 = 0.15 GeV^2
Q^2 = 0.20 GeV^2
Data/MeV/1
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

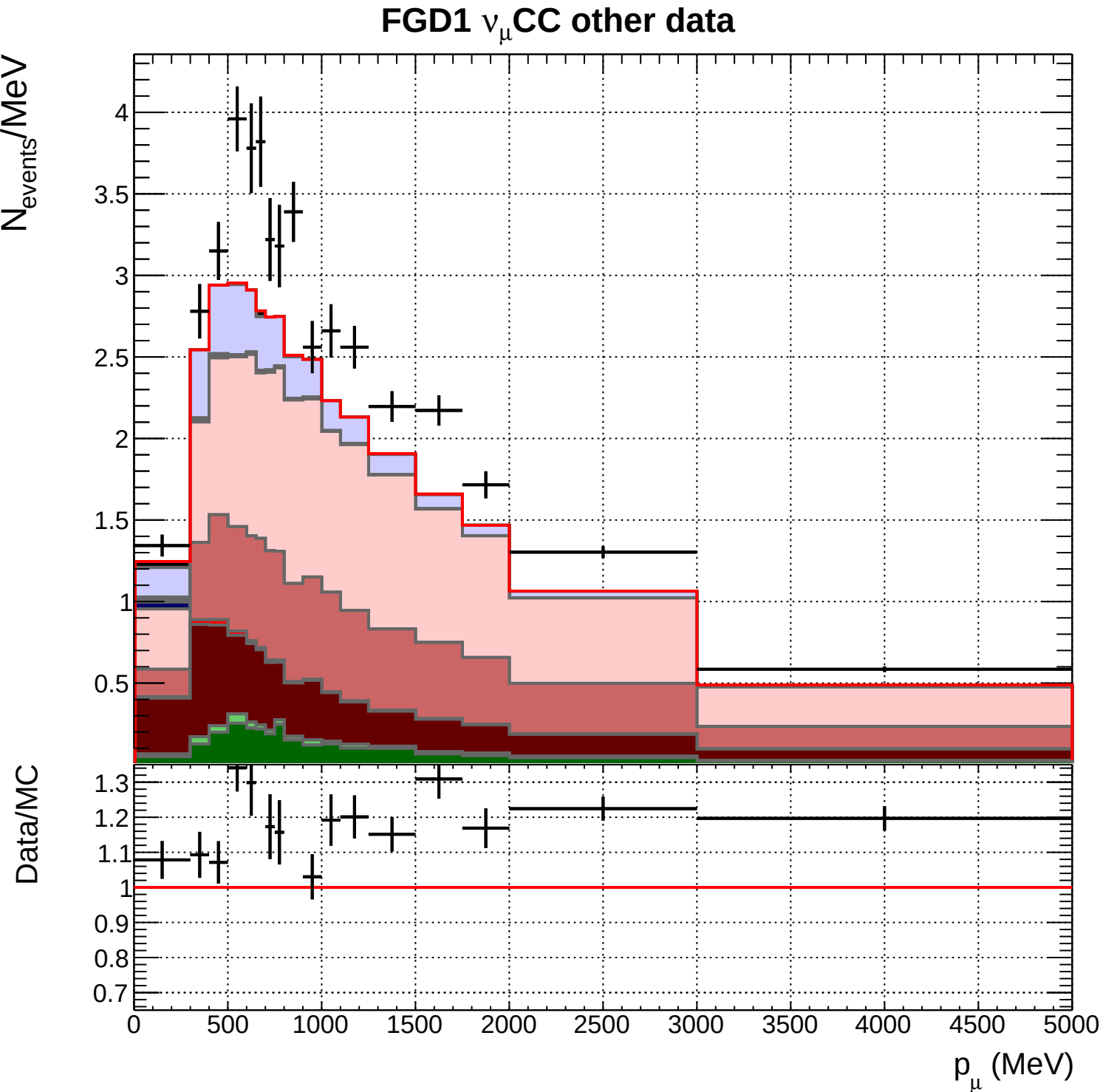

Data
MC
CCQE
2p2h
CC 1π±,0
CC coherent
CC multi-π
CC DIS
NC 1π0
NC 1π±
NC coherent
NC other
NC 1γ
Sand μ

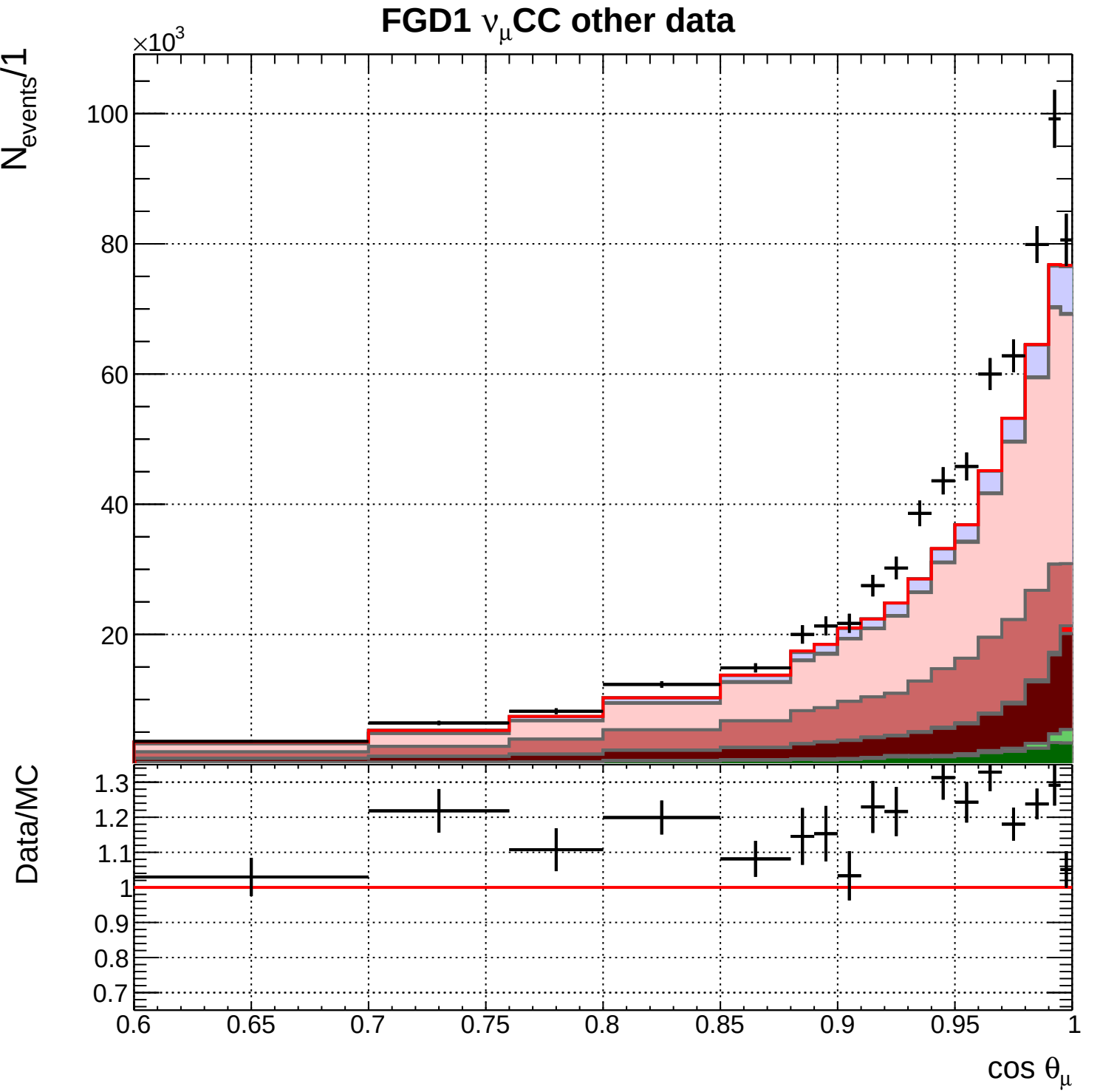

FGD1 ν_μCC 0π data
N_{events}/MeV
45
40
35
30
25
20
15
10
5
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
p_μ (MeV)

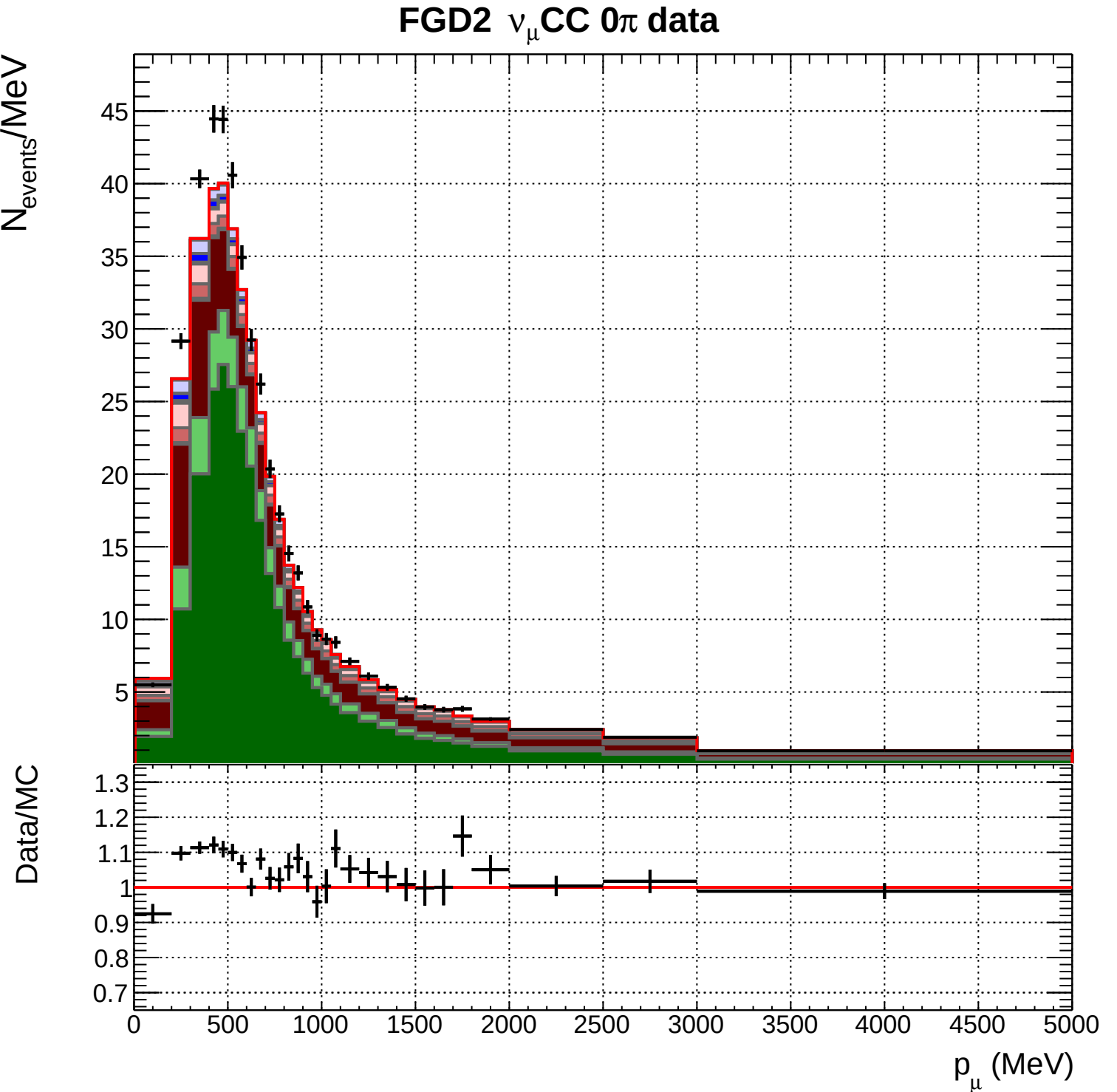

FGD1 ν_μCC 0π data
$\times 10^3$
N_{events}/1
300
250
200
150
100
50
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.5
0.55
0.6
0.65
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

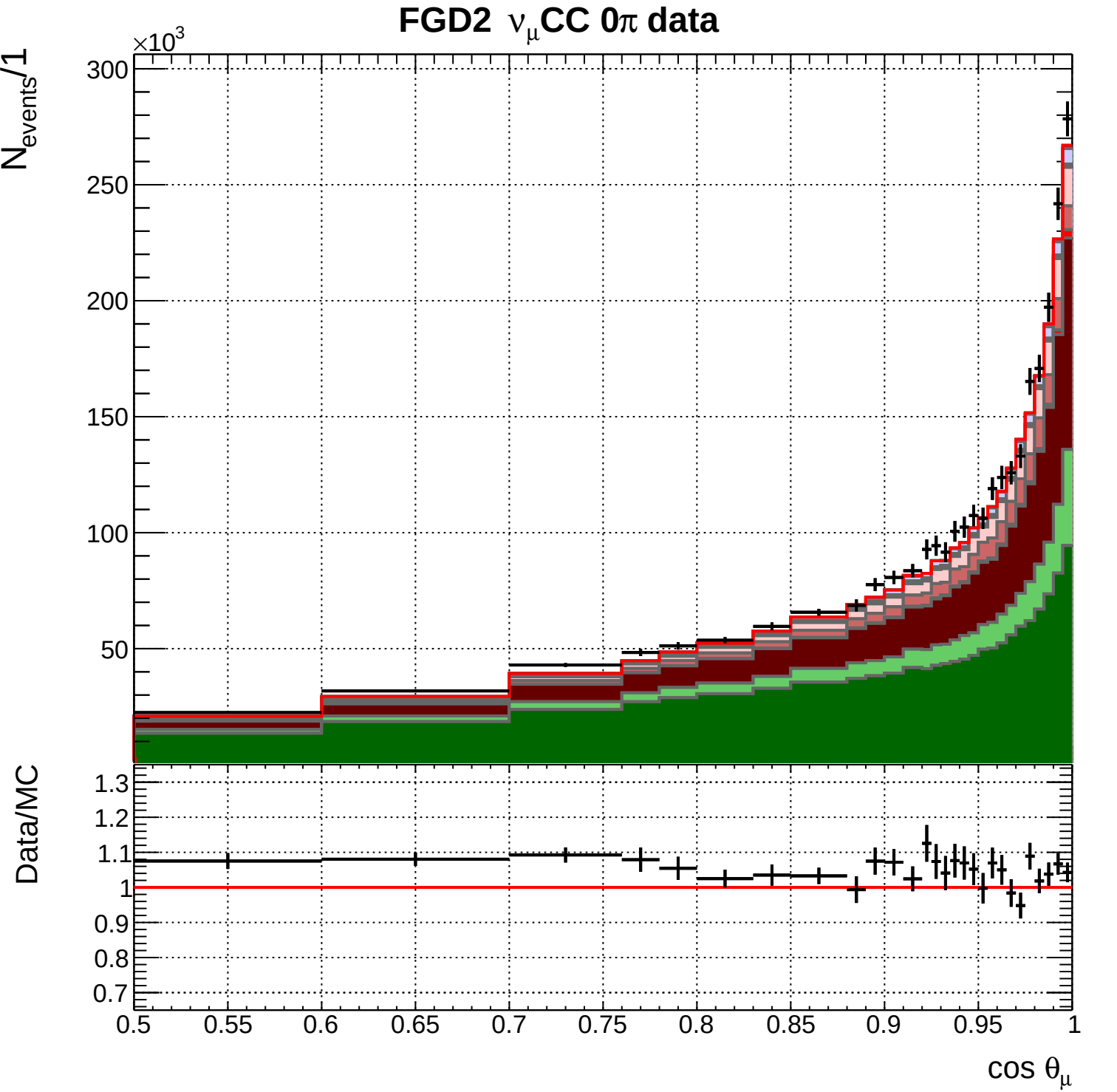

FGD1 ν_μCC 1π data
N_{events}/MeV
Data/MC
p_μ (MeV)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
1
2
3
4
5
6
7
8
0.7
0.8
0.9
1
1.1
1.2
1.3

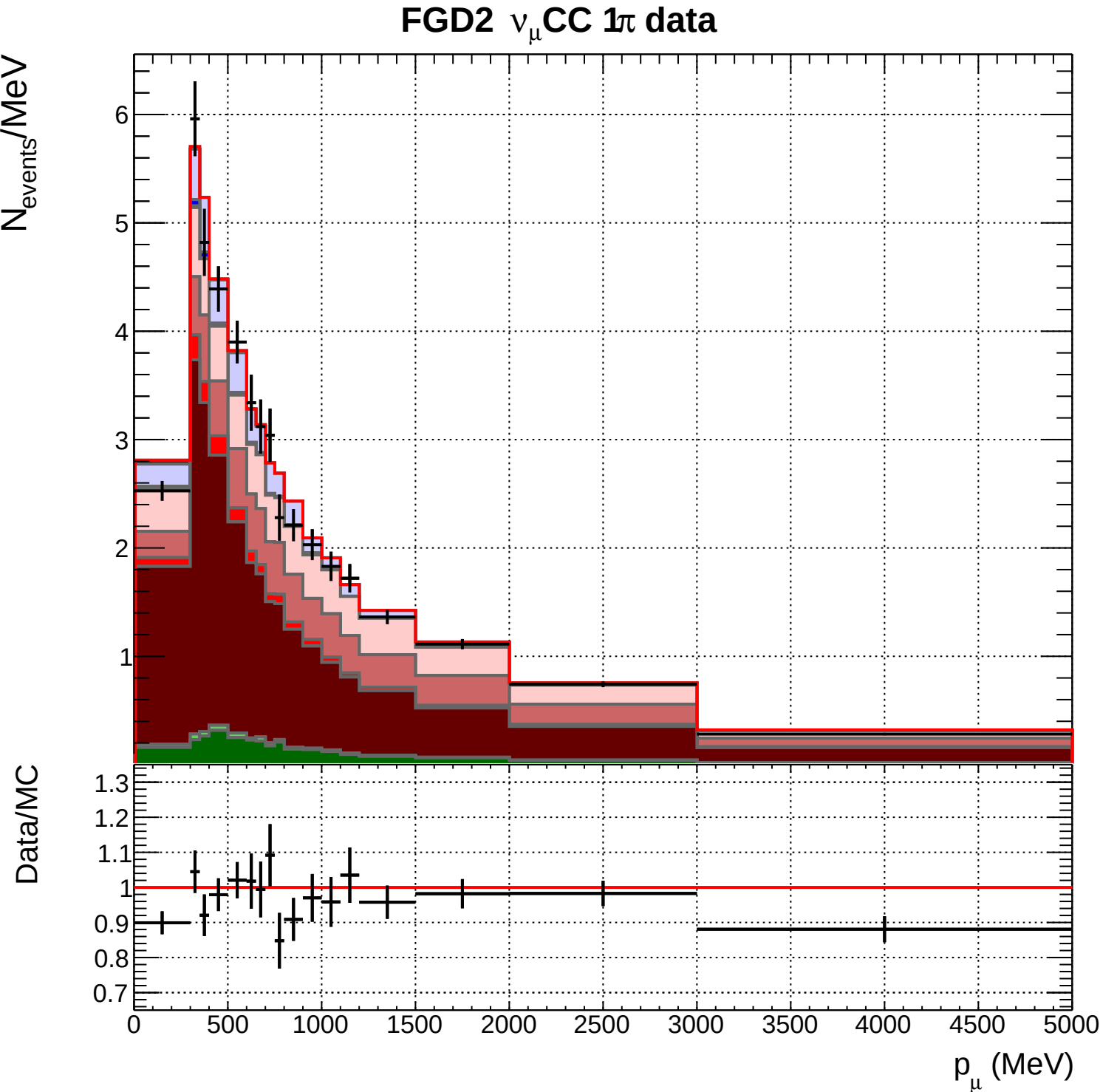

FGD1 ν_μCC 1π data
$\times 10^3$
N_{events}/1
100
80
60
40
20
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.65
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

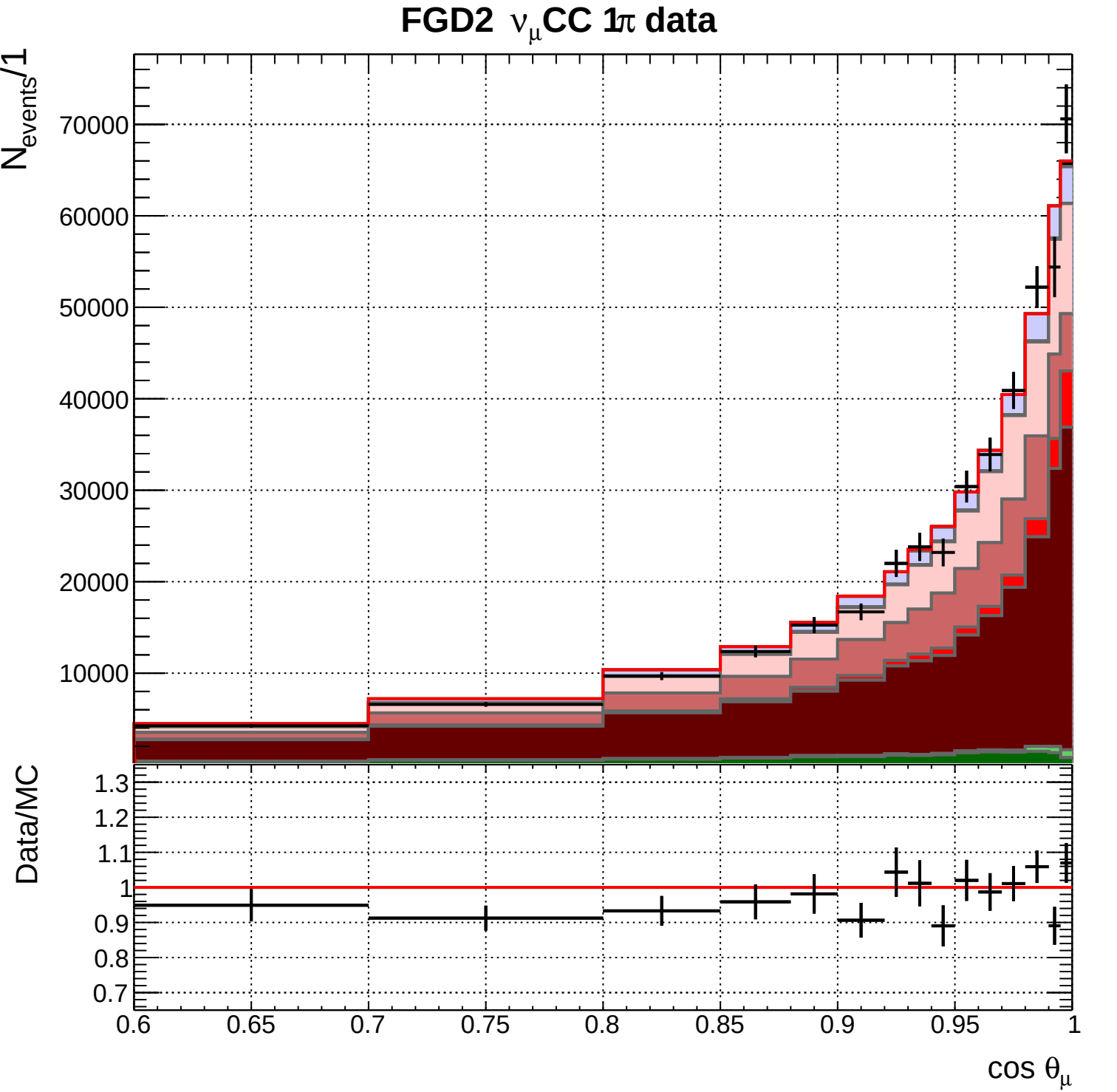

FGD1 ν_μCC other data
N_{events}/MeV
Data/MC
p_μ (MeV)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0.5
1
1.5
2
2.5
3
3.5
4
0.7
0.8
0.9
1
1.1
1.2
1.3

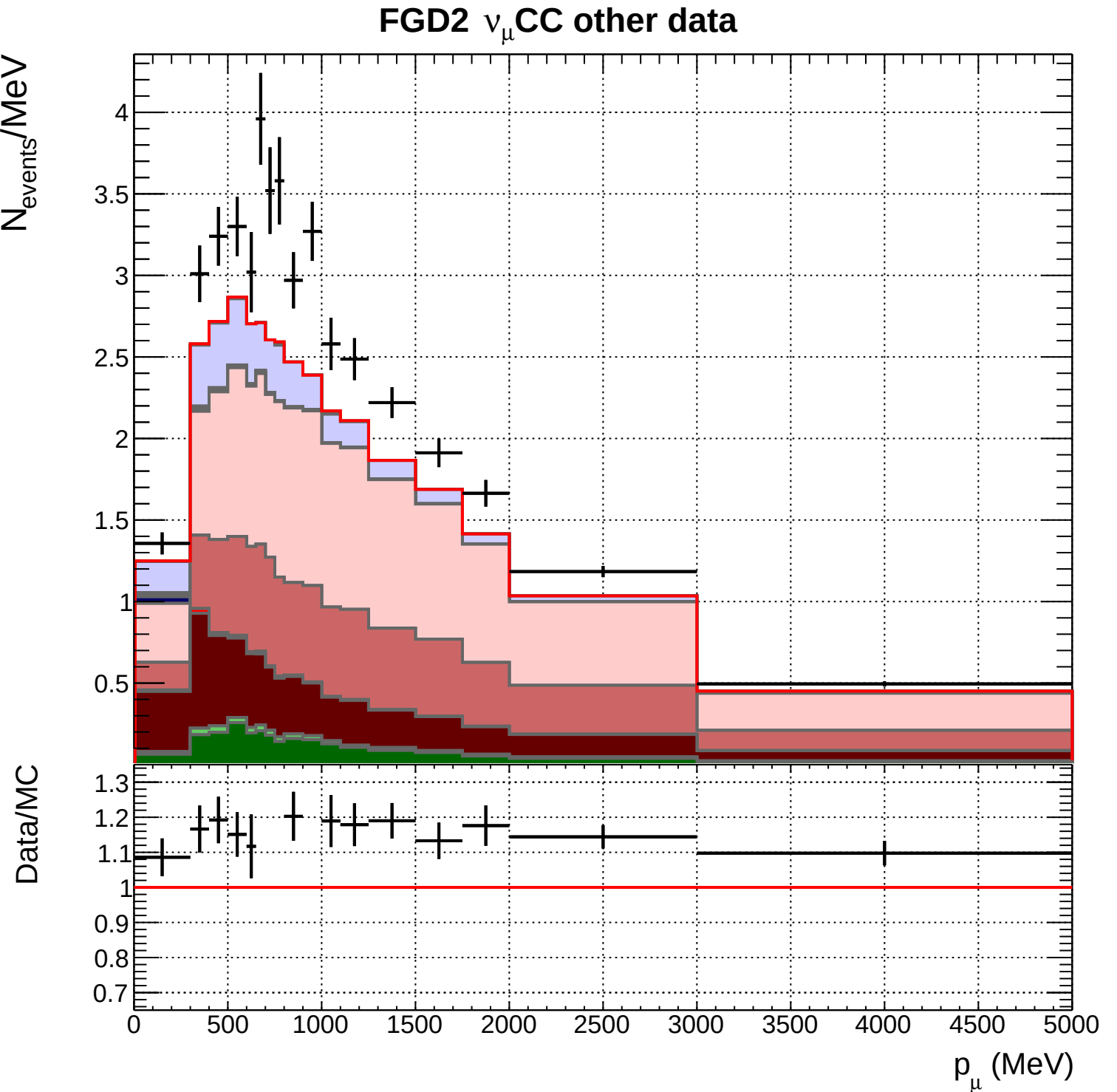

FGD1 ν_μCC other data
$\times 10^3$
N_{events}/1
100
80
60
40
20
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.65
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

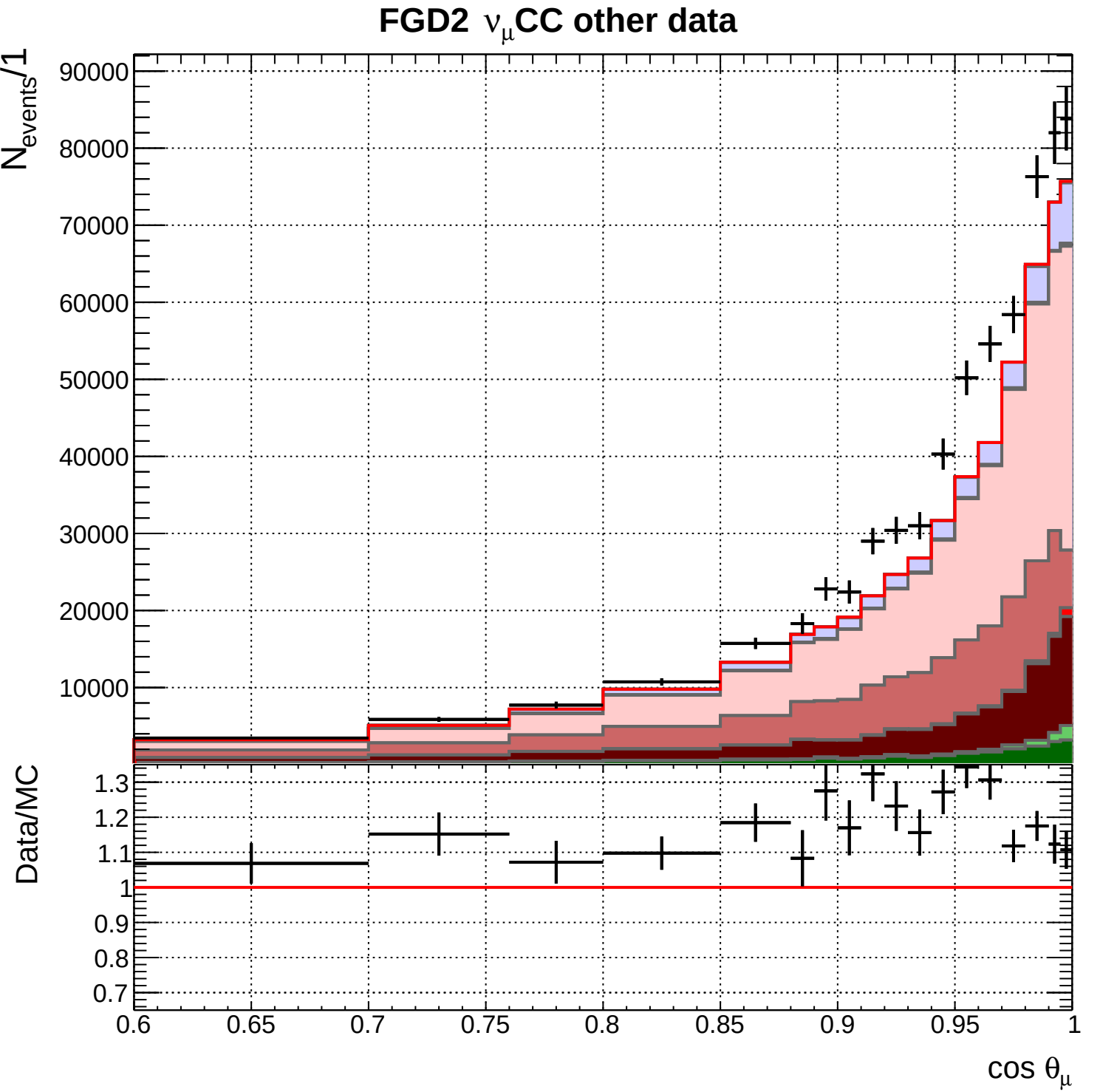

FGD2 ν_μCC 0π data
N_{events}/MeV
45
40
35
30
25
20
15
10
5
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
p_μ (MeV)

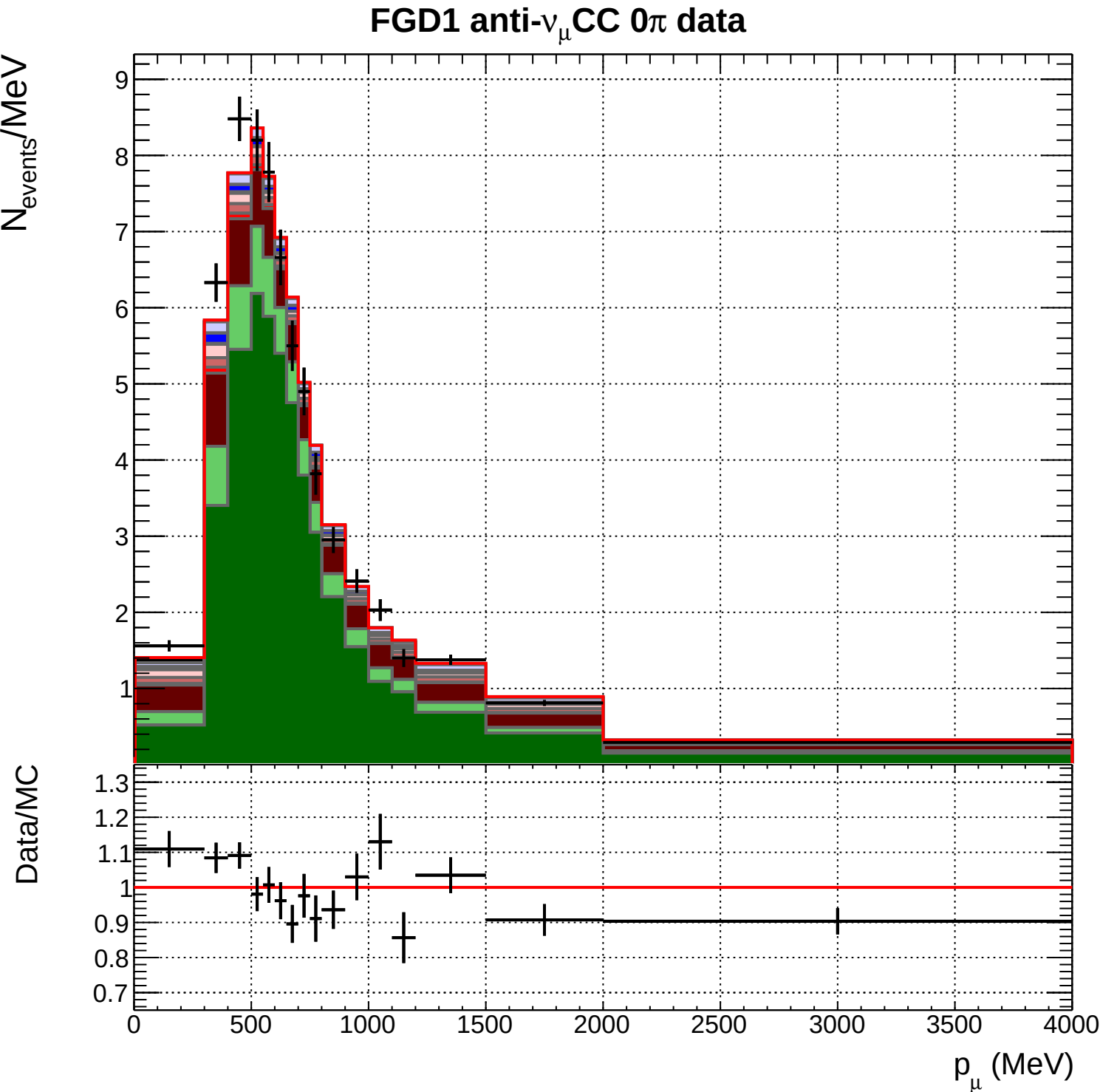

FGD2 ν_μCC 0π data
$\times 10^3$
N_{events}/1
300
250
200
150
100
50
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.5
0.55
0.6
0.65
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

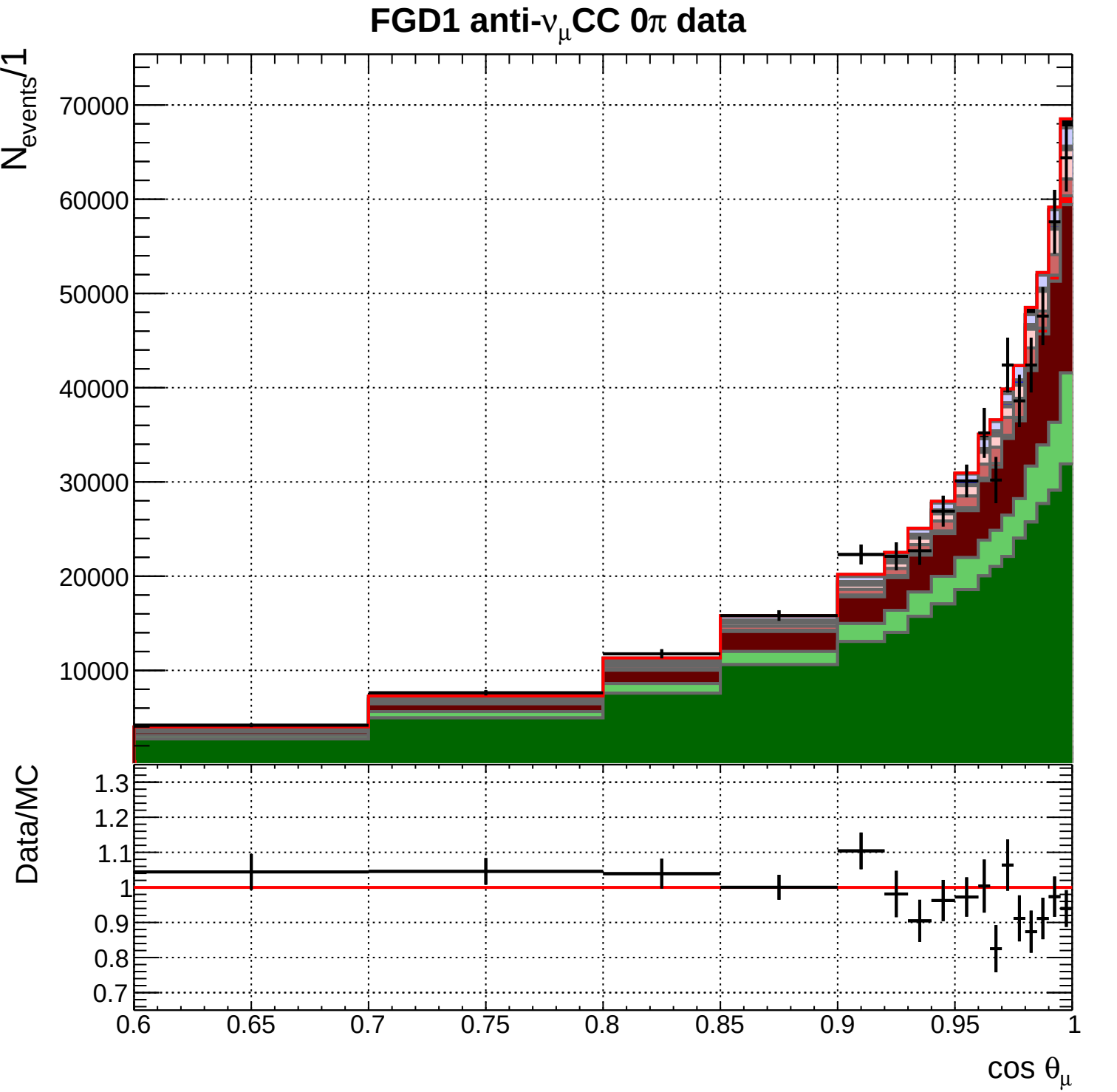

FGD2 ν_μCC 1π data
N_{events}/MeV
Data/MC
p_μ (MeV)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
1
2
3
4
5
6
0.7
0.8
0.9
1
1.1
1.2
1.3

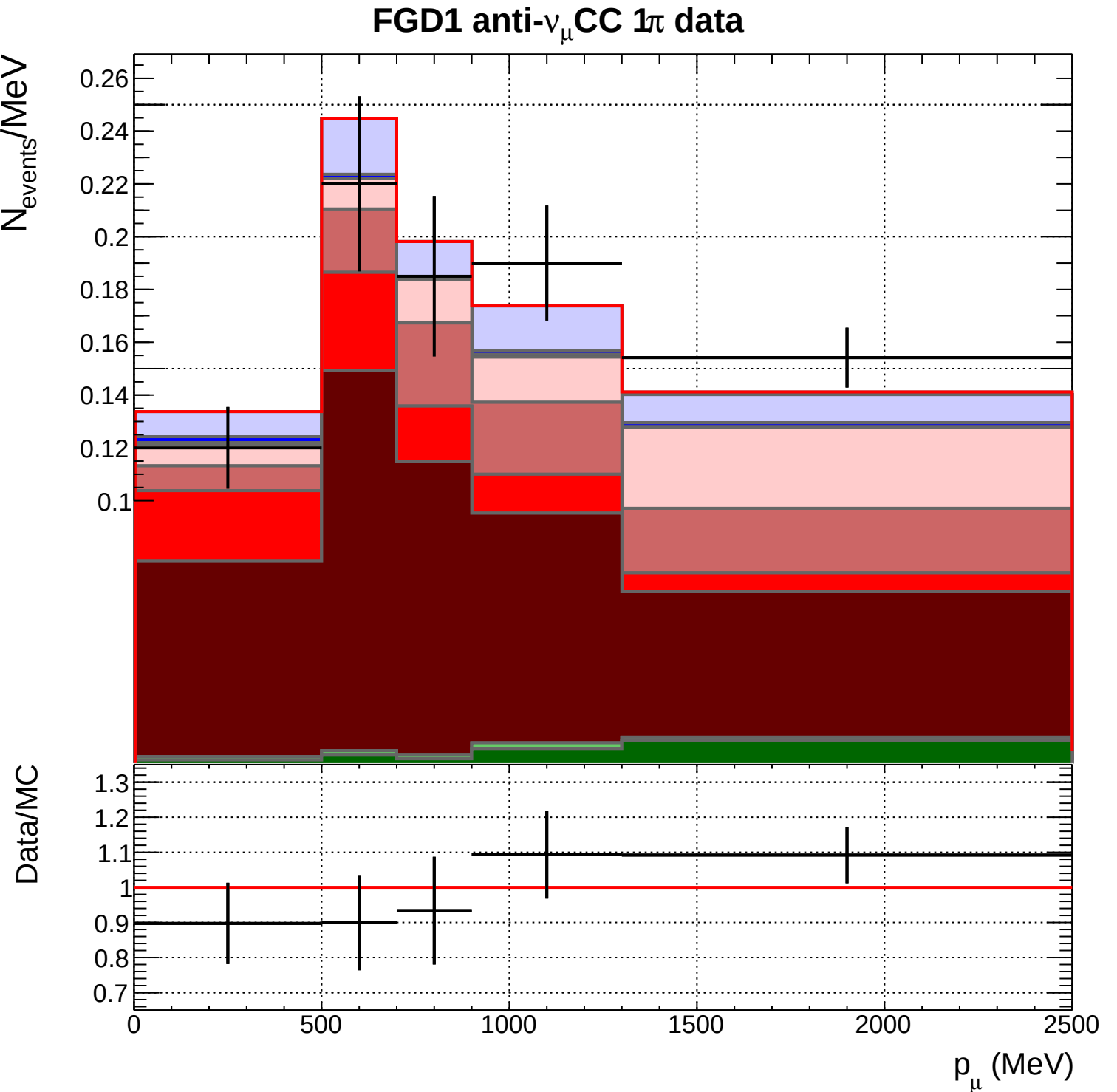

FGD2 ν_μCC 1π data
N_{events}/1
70000
60000
50000
40000
30000
20000
10000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.65
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

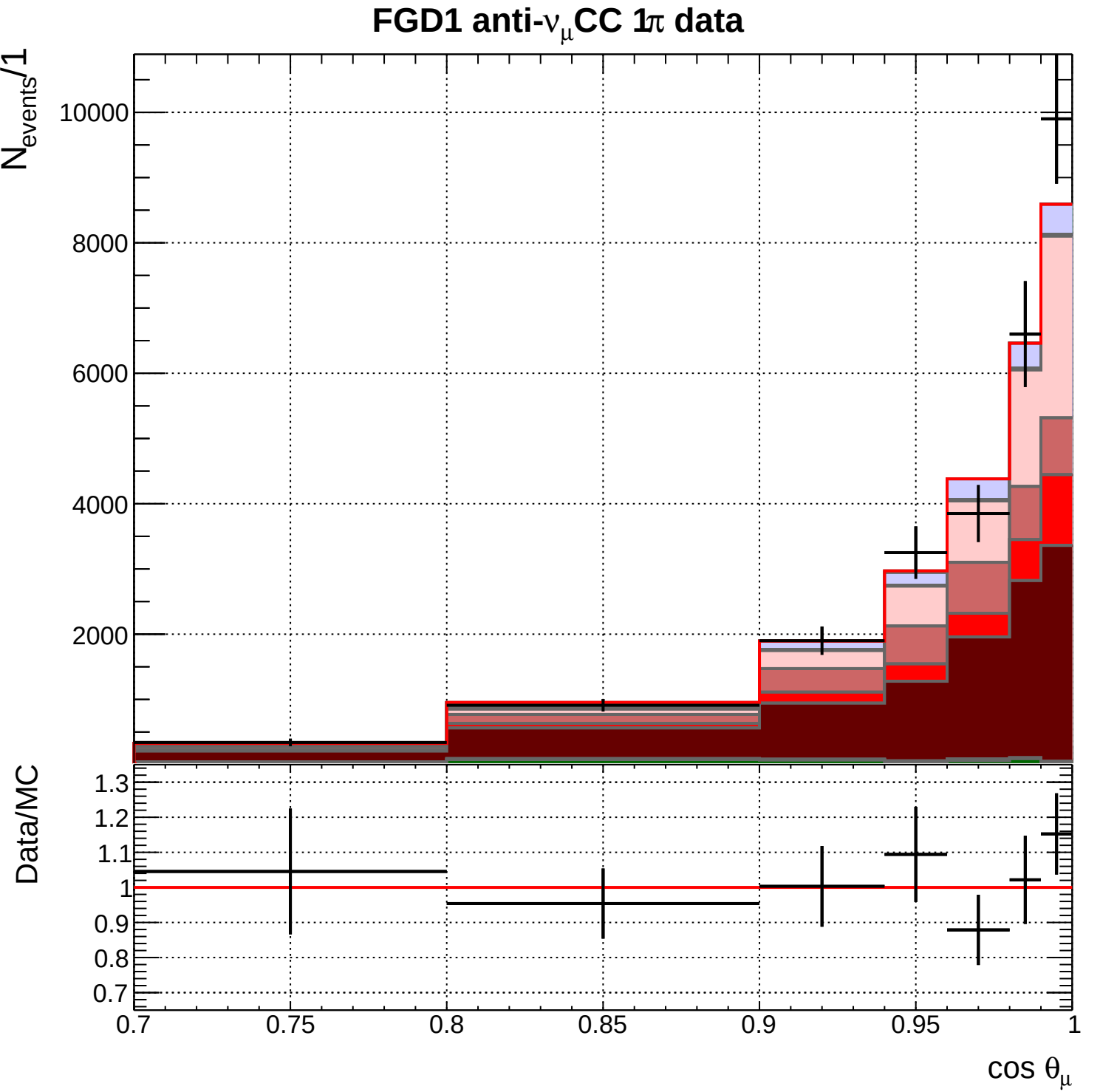

FGD2 ν_μCC other data
N_{events}/MeV
Data/MC
p_μ (MeV)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0.5
1
1.5
2
2.5
3
3.5
4
0.7
0.8
0.9
1
1.1
1.2
1.3

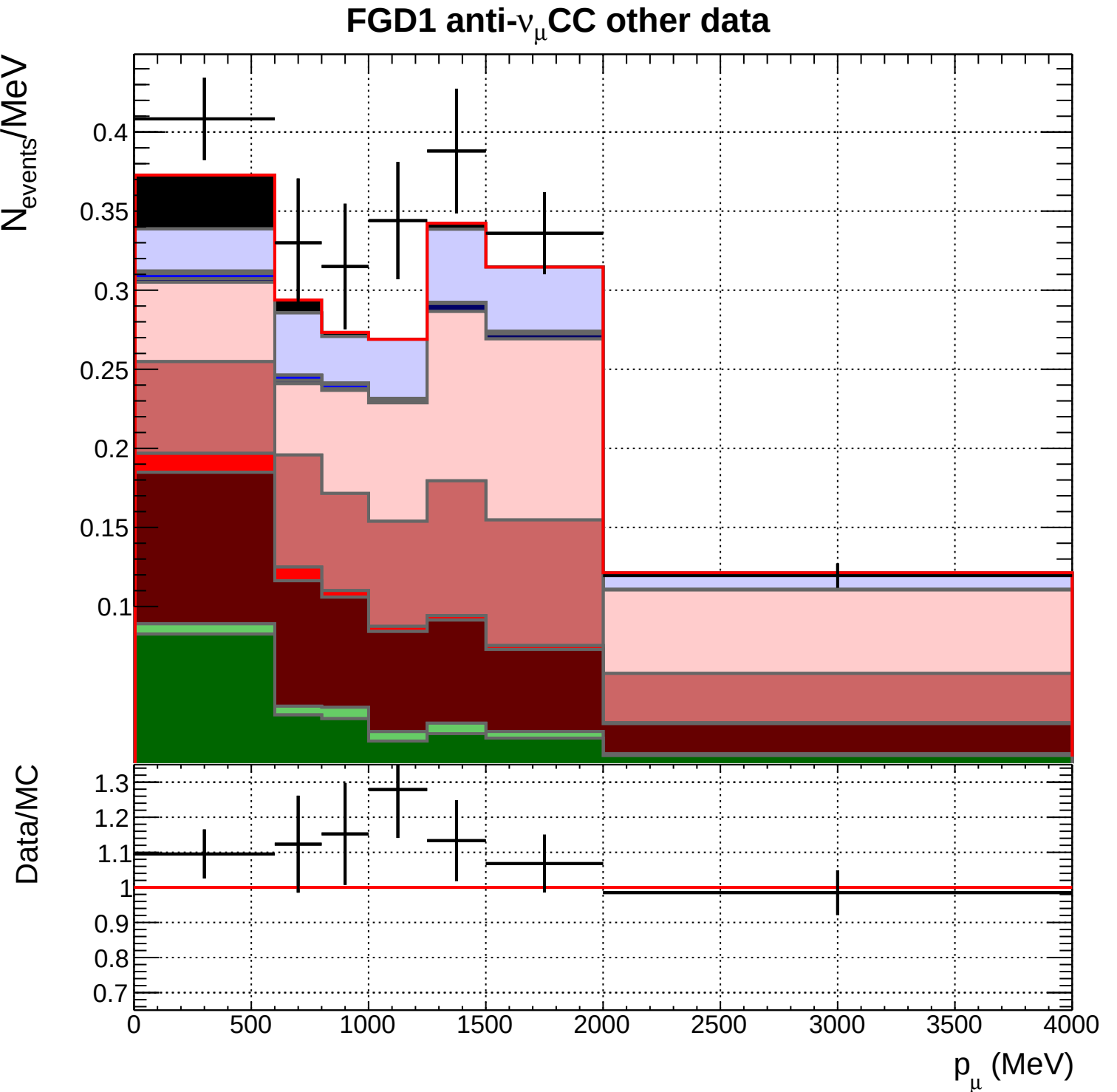

FGD2 ν_μCC other data
N_{events}/1
90000
80000
70000
60000
50000
40000
30000
20000
10000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.65
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

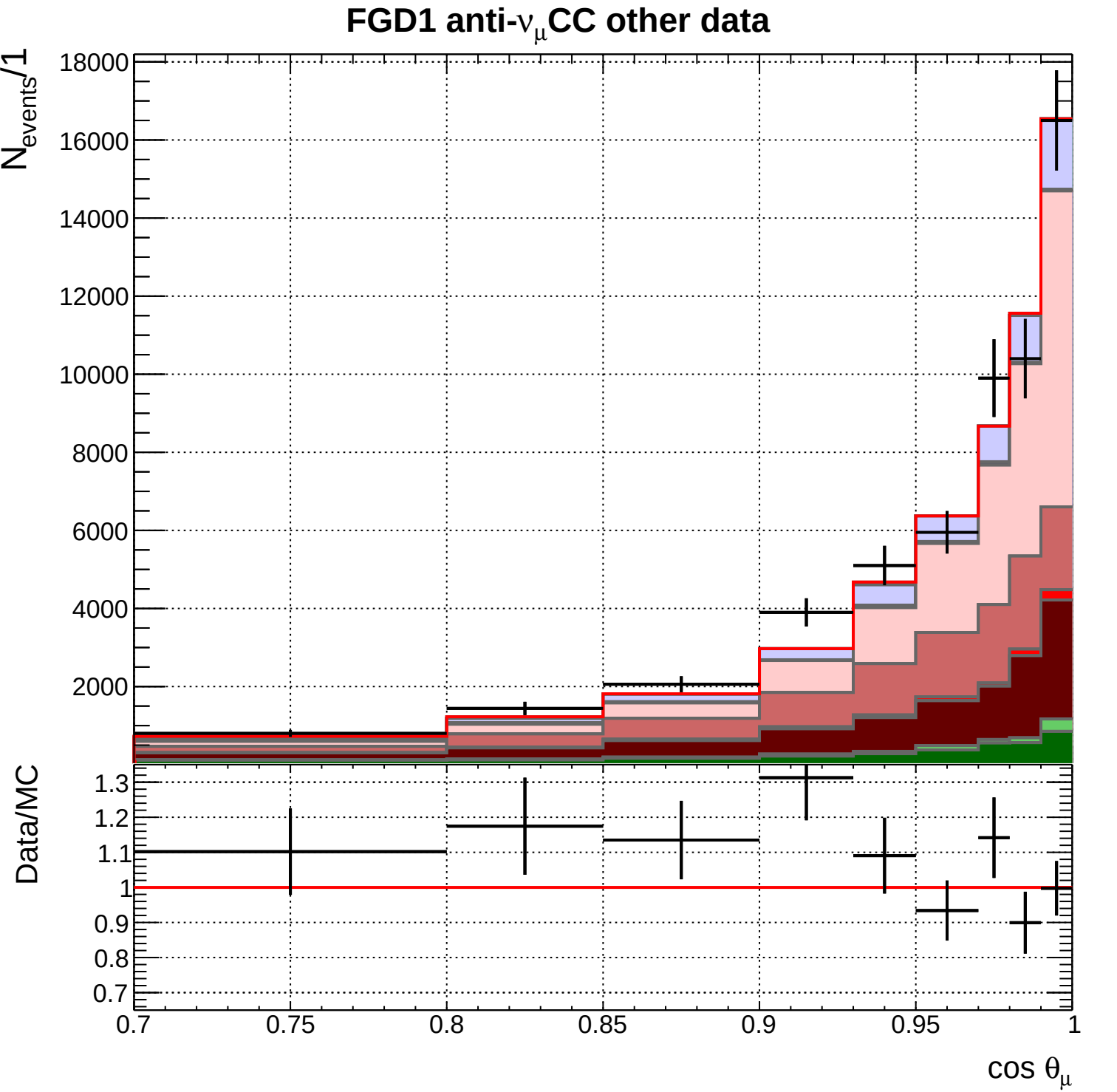

FGD1 anti-ν_μCC 0π data
N_{events}/MeV
Data/MC
p_μ (MeV)
0
500
1000
1500
2000
2500
3000
3500
4000
1
2
3
4
5
6
7
8
9
0.7
0.8
0.9
1
1.1
1.2
1.3

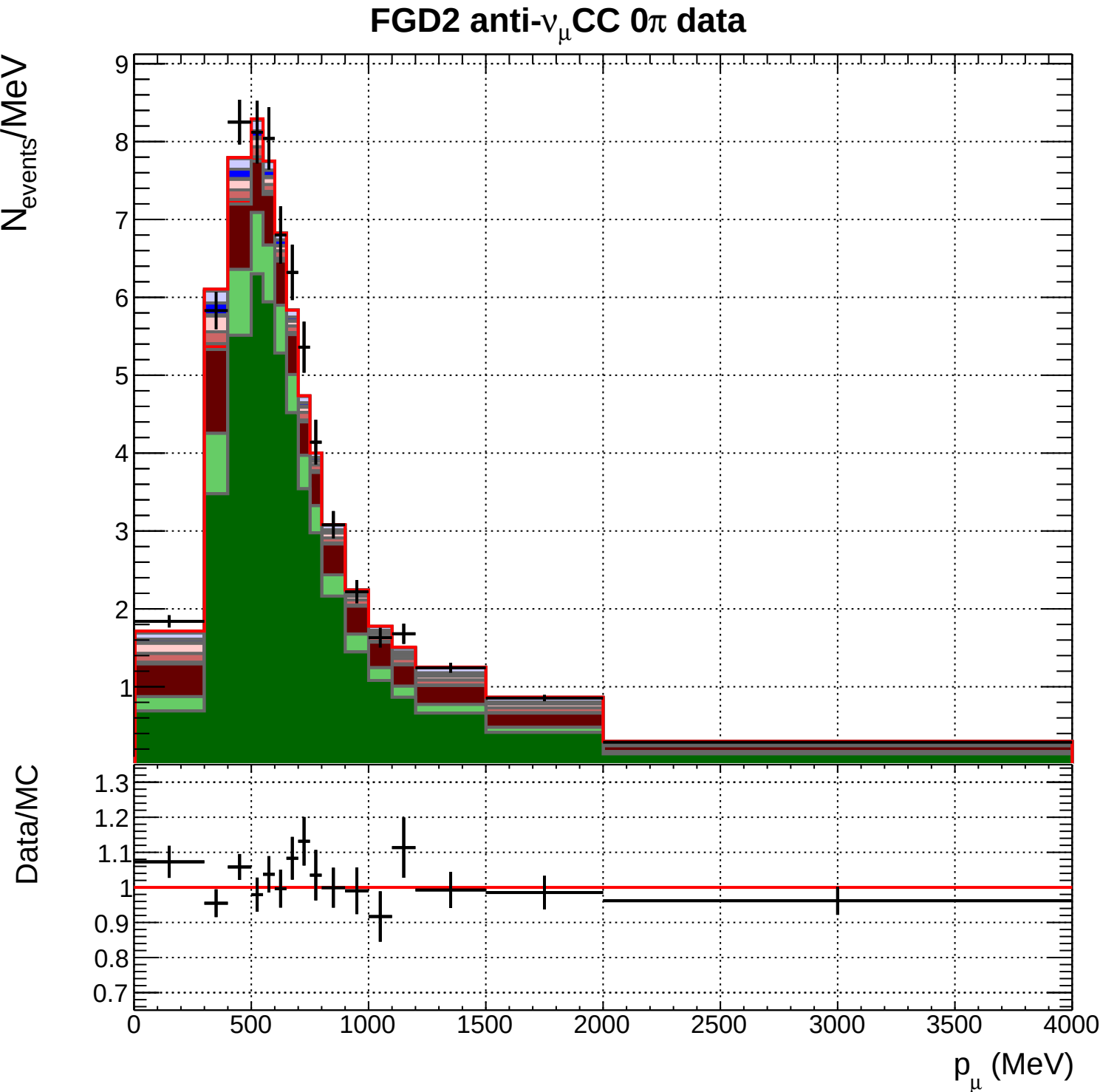

FGD1 anti-ν_μCC 0π data
N_{events}/1
70000
60000
50000
40000
30000
20000
10000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.65
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

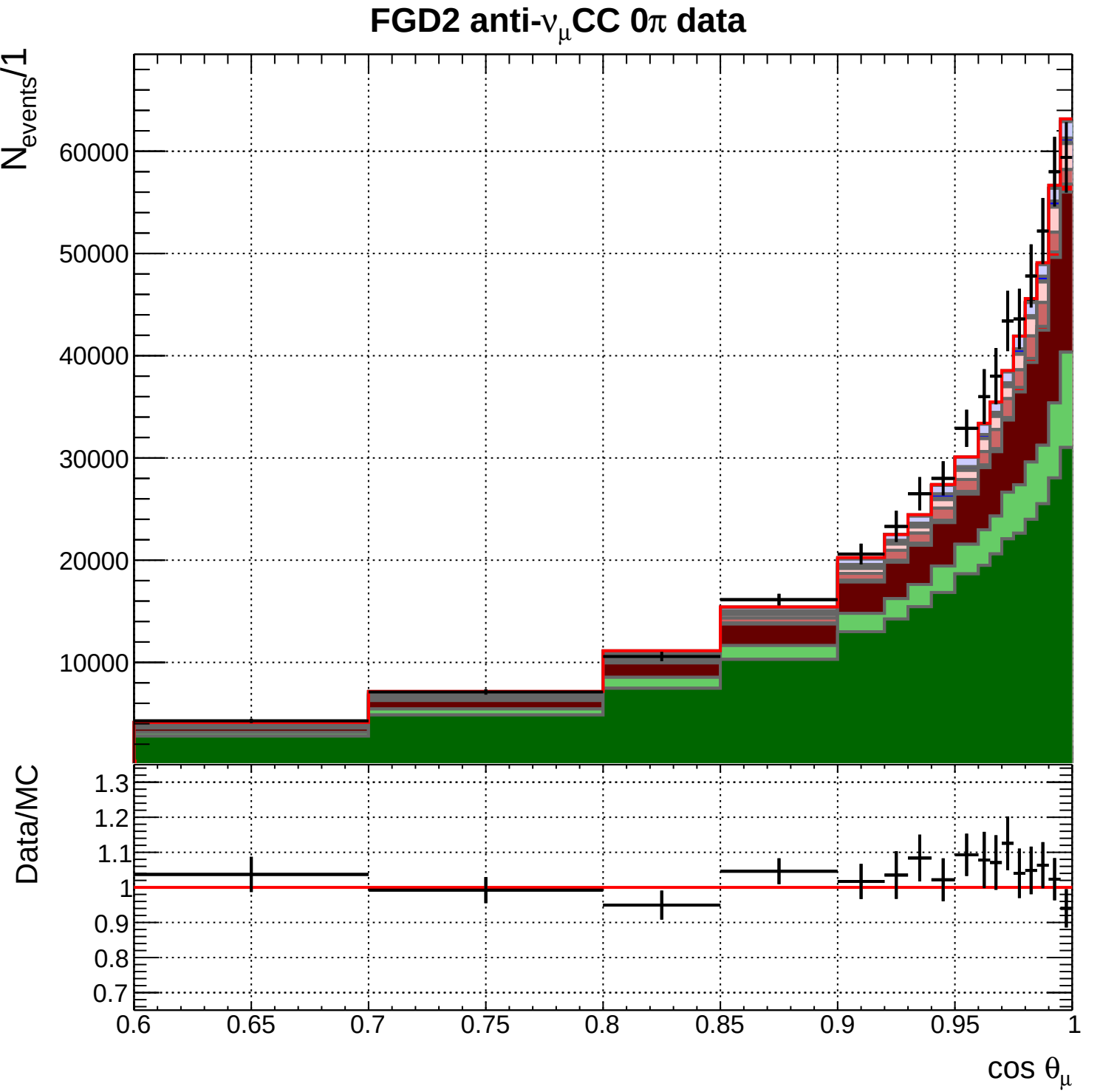

FGD1 anti-ν_μCC 1π data
N_{events}/MeV
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
500
1000
1500
2000
2500
p_μ (MeV)

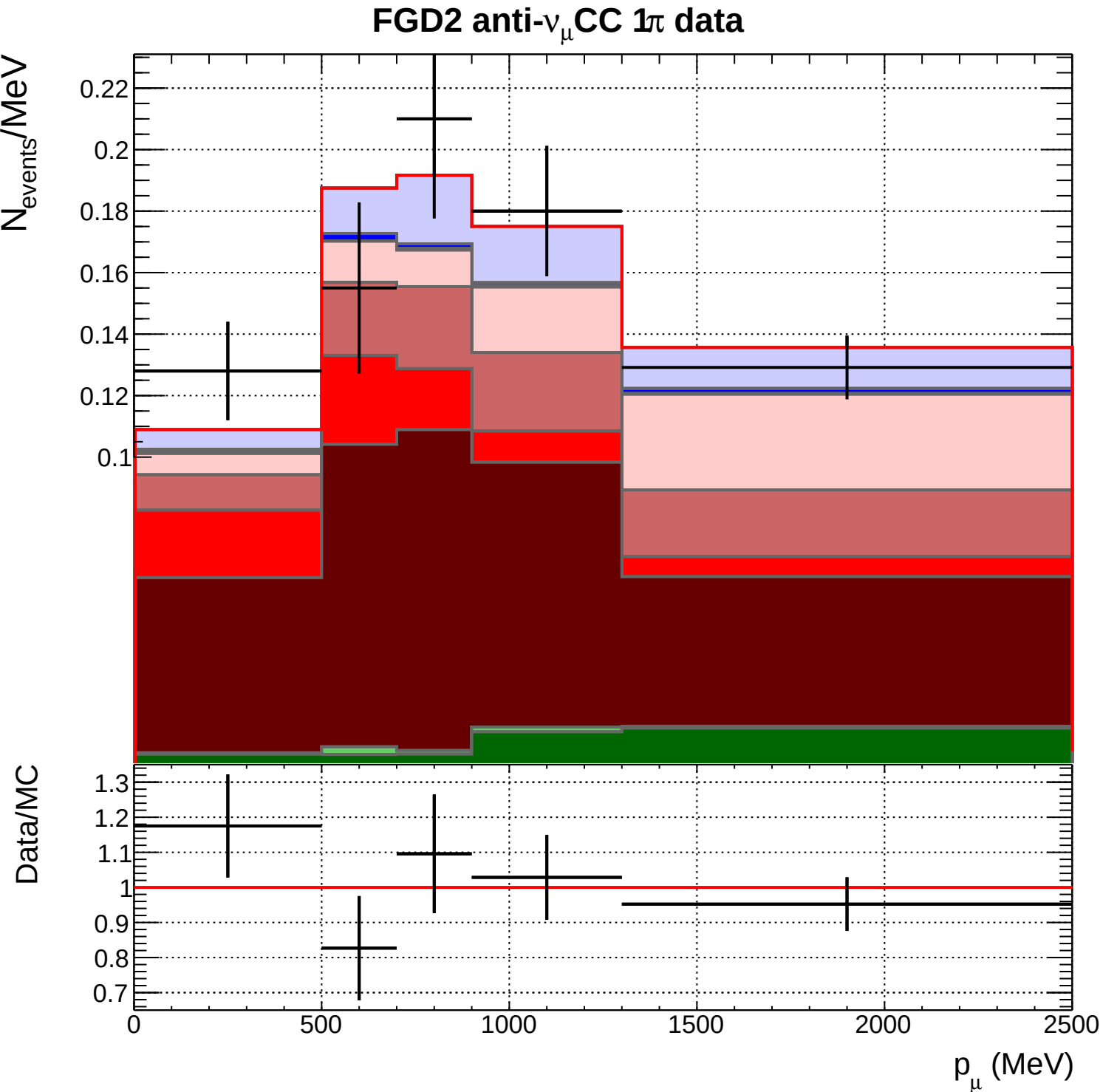

FGD1 anti-ν_μCC 1π data
N_{events}/1
10000
8000
6000
4000
2000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

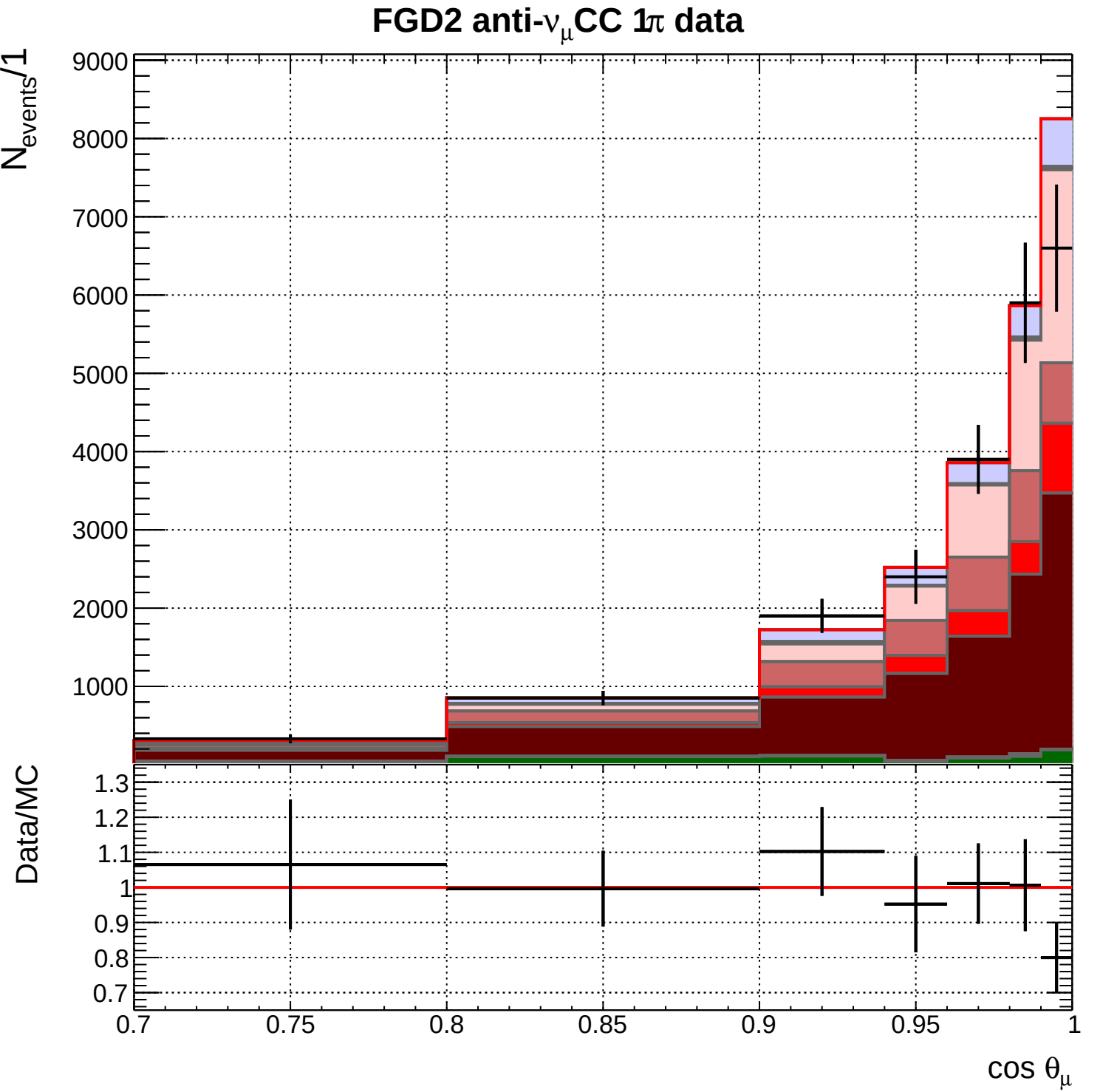

FGD1 anti-ν_μCC other data
N_{events}/MeV
0.4
0.35
0.3
0.25
0.2
0.15
0.1
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
500
1000
1500
2000
2500
3000
3500
4000
p_μ (MeV)

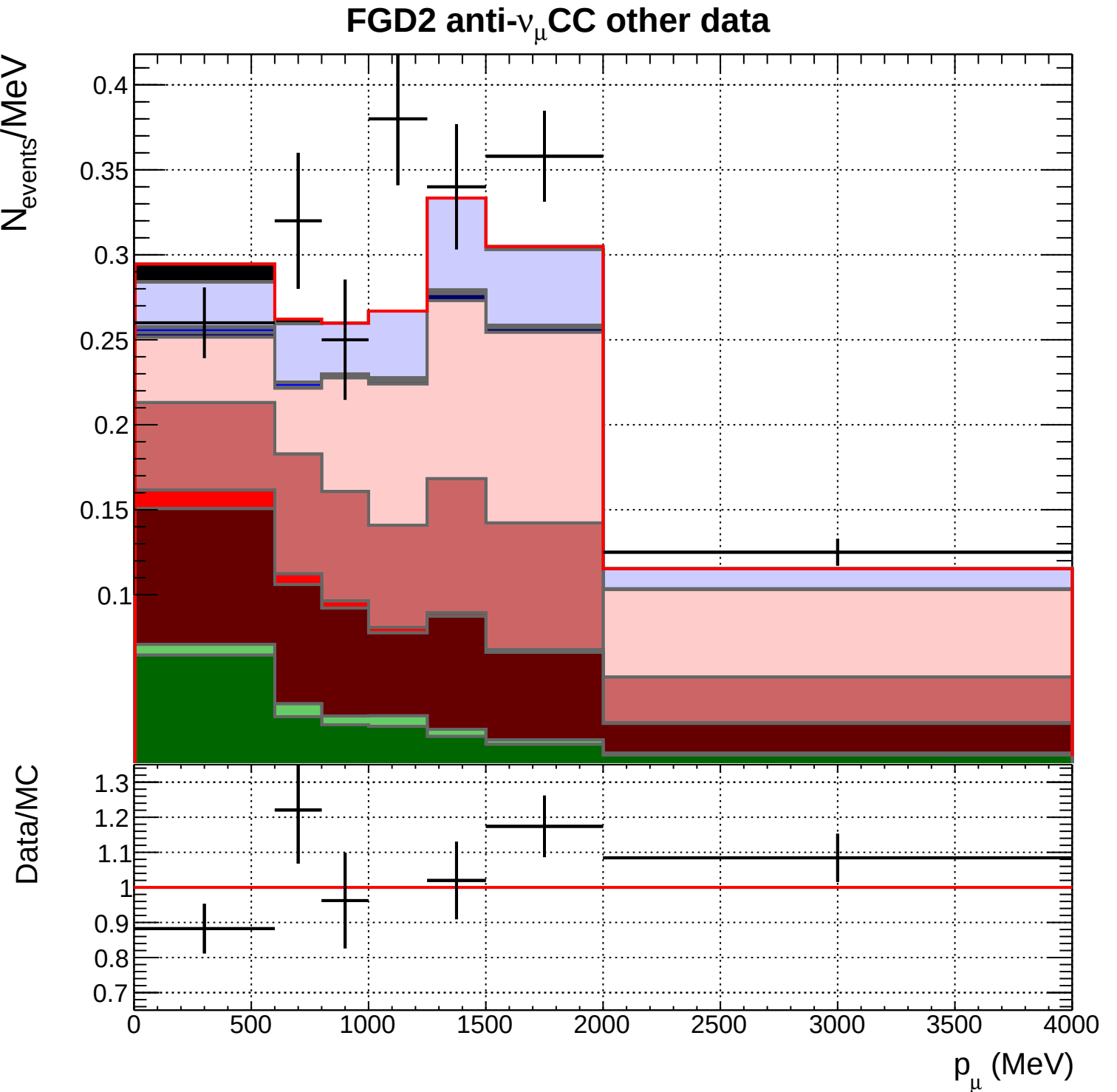

FGD1 anti-ν_μCC other data
N_{events}/1
18000
16000
14000
12000
10000
8000
6000
4000
2000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

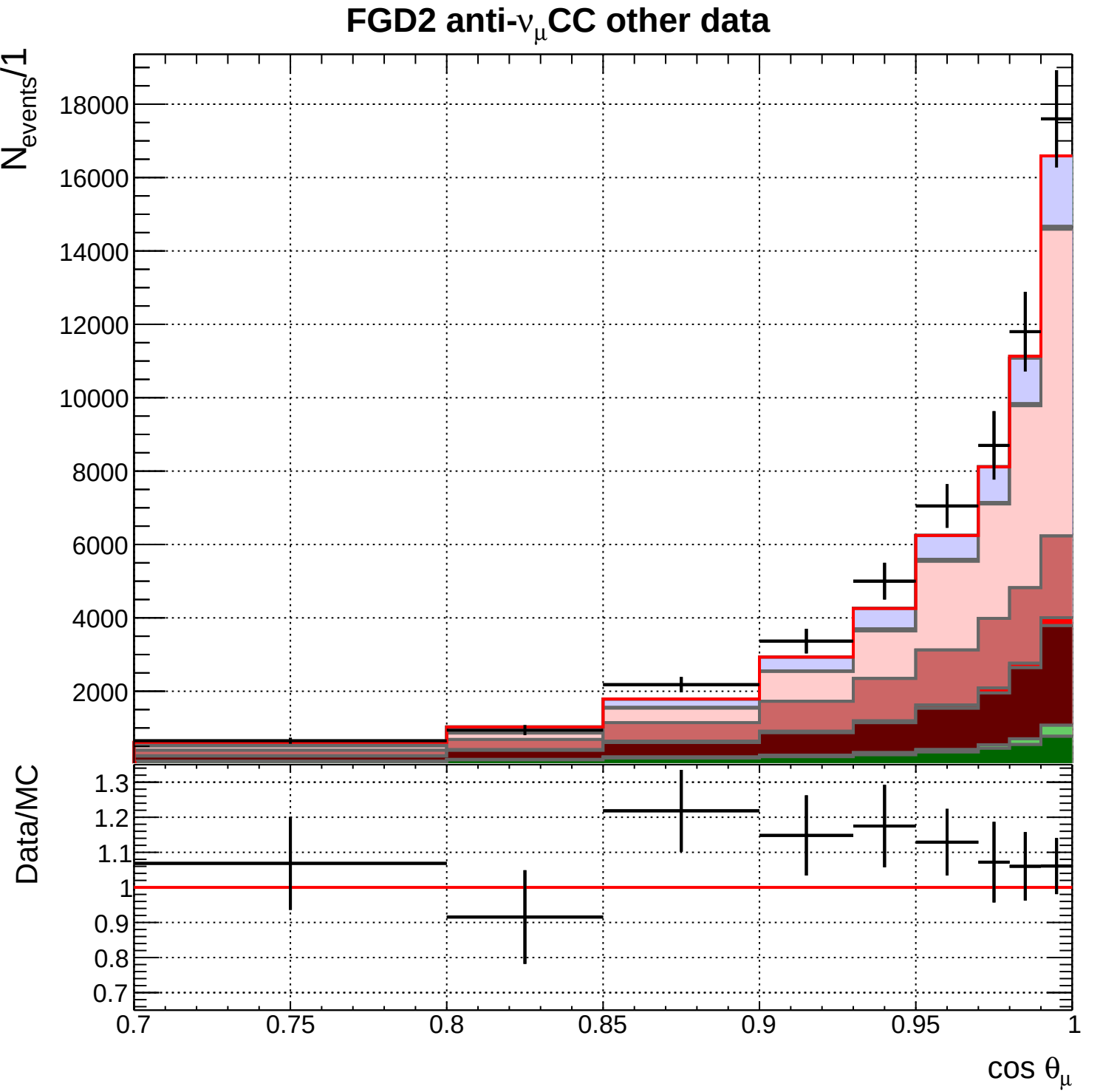

FGD2 anti-ν_μCC 0π data
N_{events}/MeV
Data/MC
p_μ (MeV)
0
500
1000
1500
2000
2500
3000
3500
4000
1
2
3
4
5
6
7
8
9
0.7
0.8
0.9
1
1.1
1.2
1.3

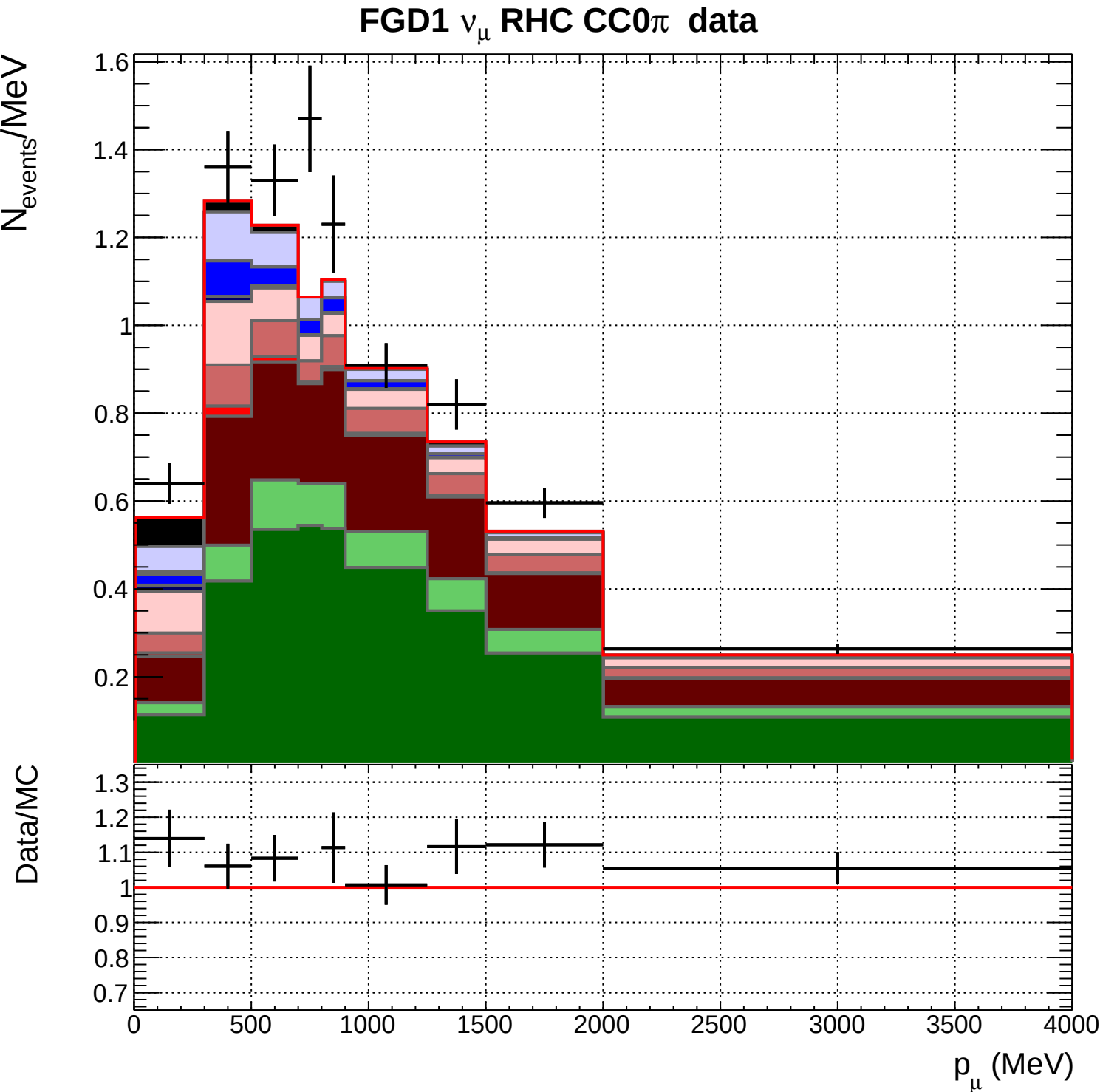

FGD2 anti-ν_μCC 0π data
N_{events}/1
60000
50000
40000
30000
20000
10000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.65
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

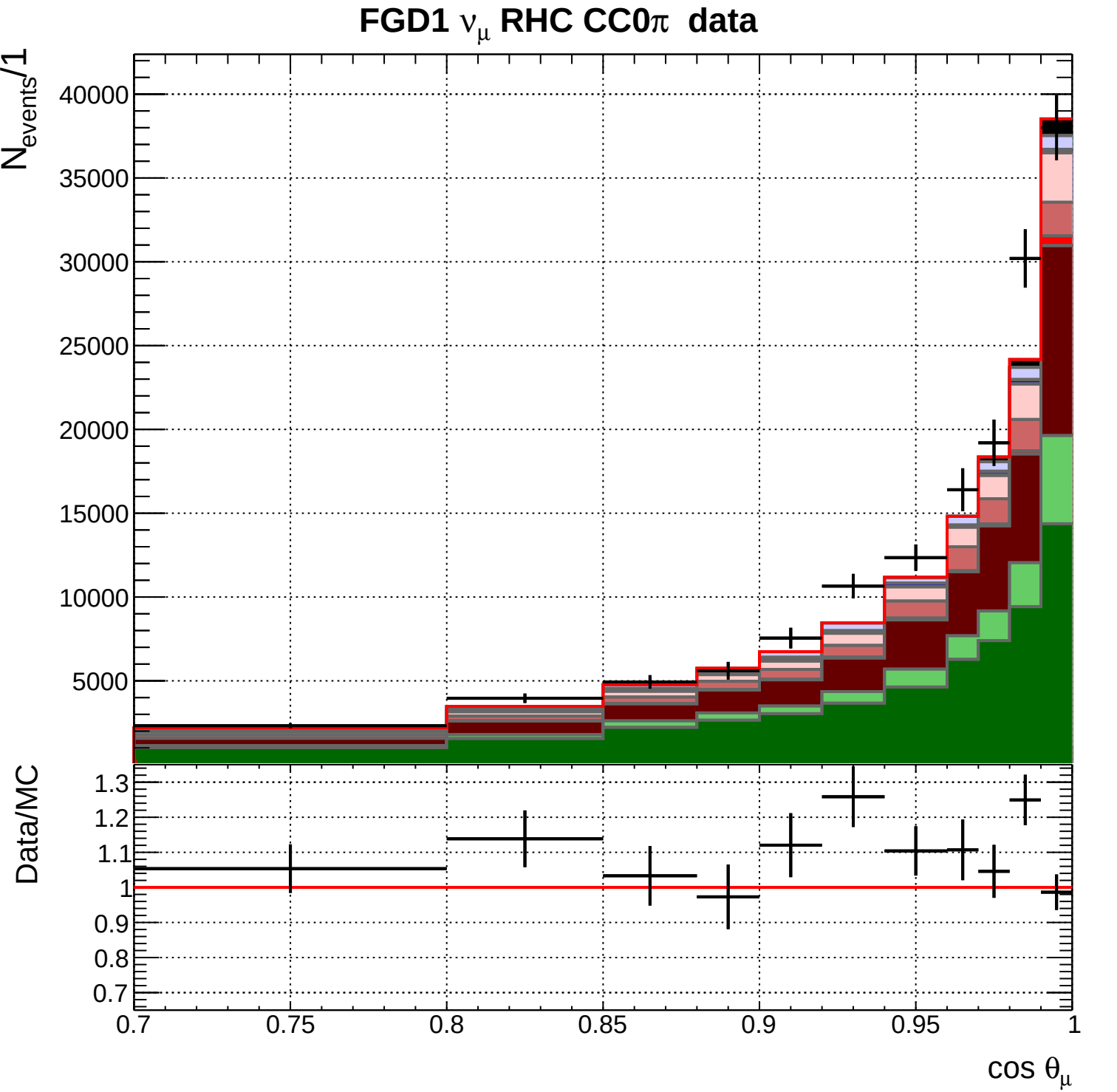

FGD2 anti-ν_μCC 1π data
N_{events}/MeV
0.22
0.2
0.18
0.16
0.14
0.12
0.1
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
500
1000
1500
2000
2500
p_μ (MeV)

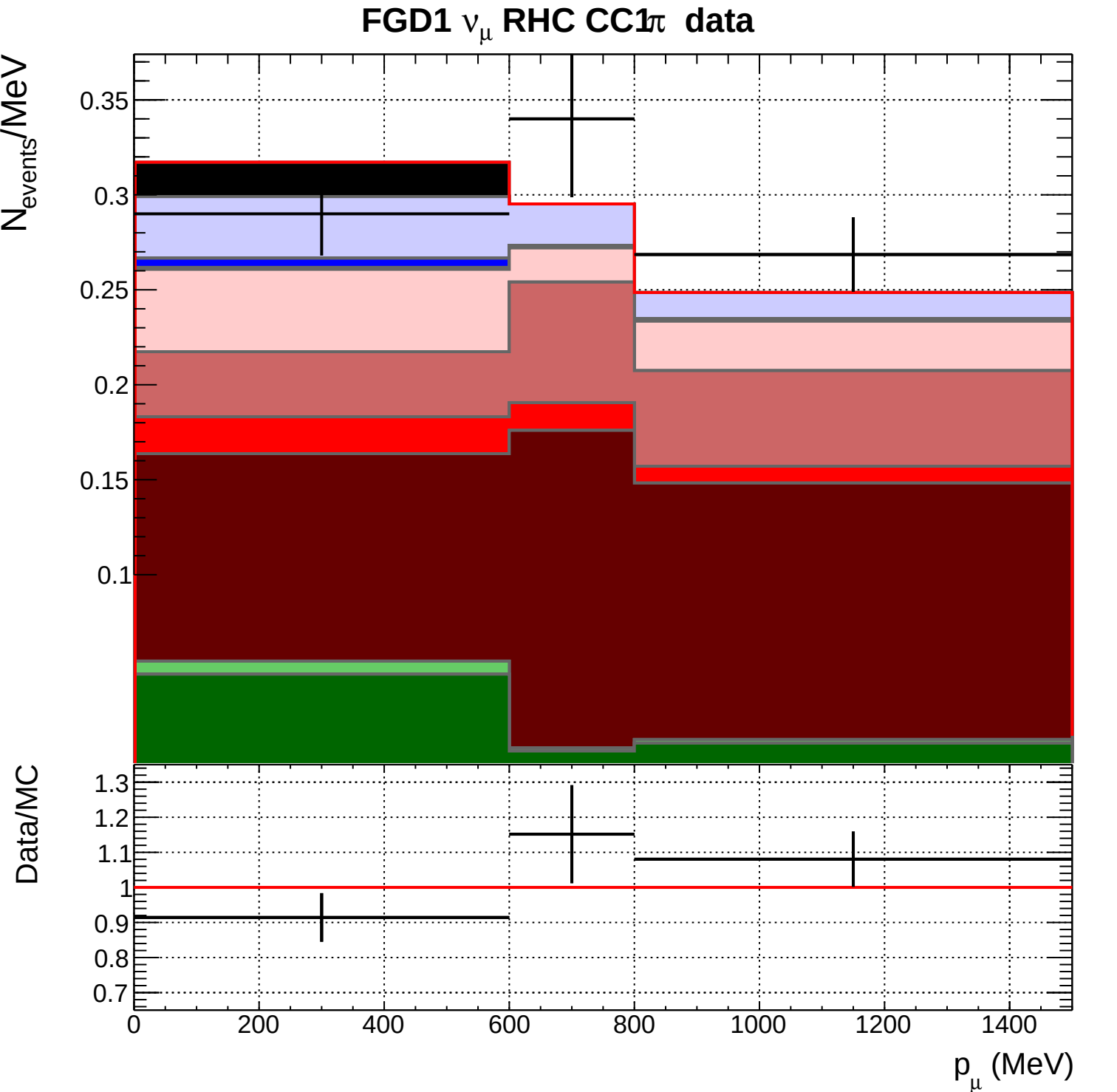

FGD2 anti-ν_μCC 1π data
N_{events}/1
9000
8000
7000
6000
5000
4000
3000
2000
1000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

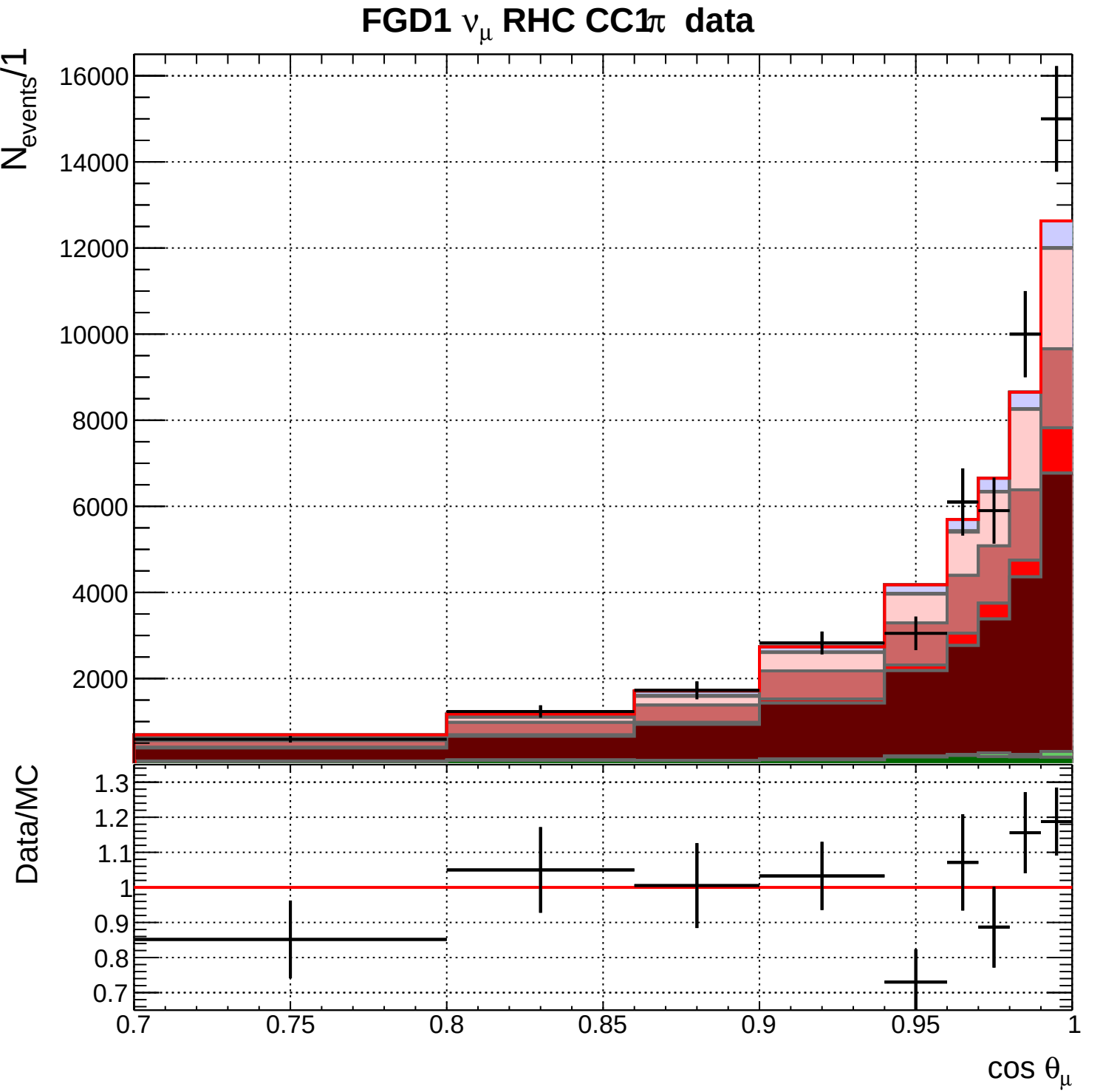

FGD2 anti-ν_μCC other data
N_{events}/MeV
0.4
0.35
0.3
0.25
0.2
0.15
0.1
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
500
1000
1500
2000
2500
3000
3500
4000
p_μ (MeV)

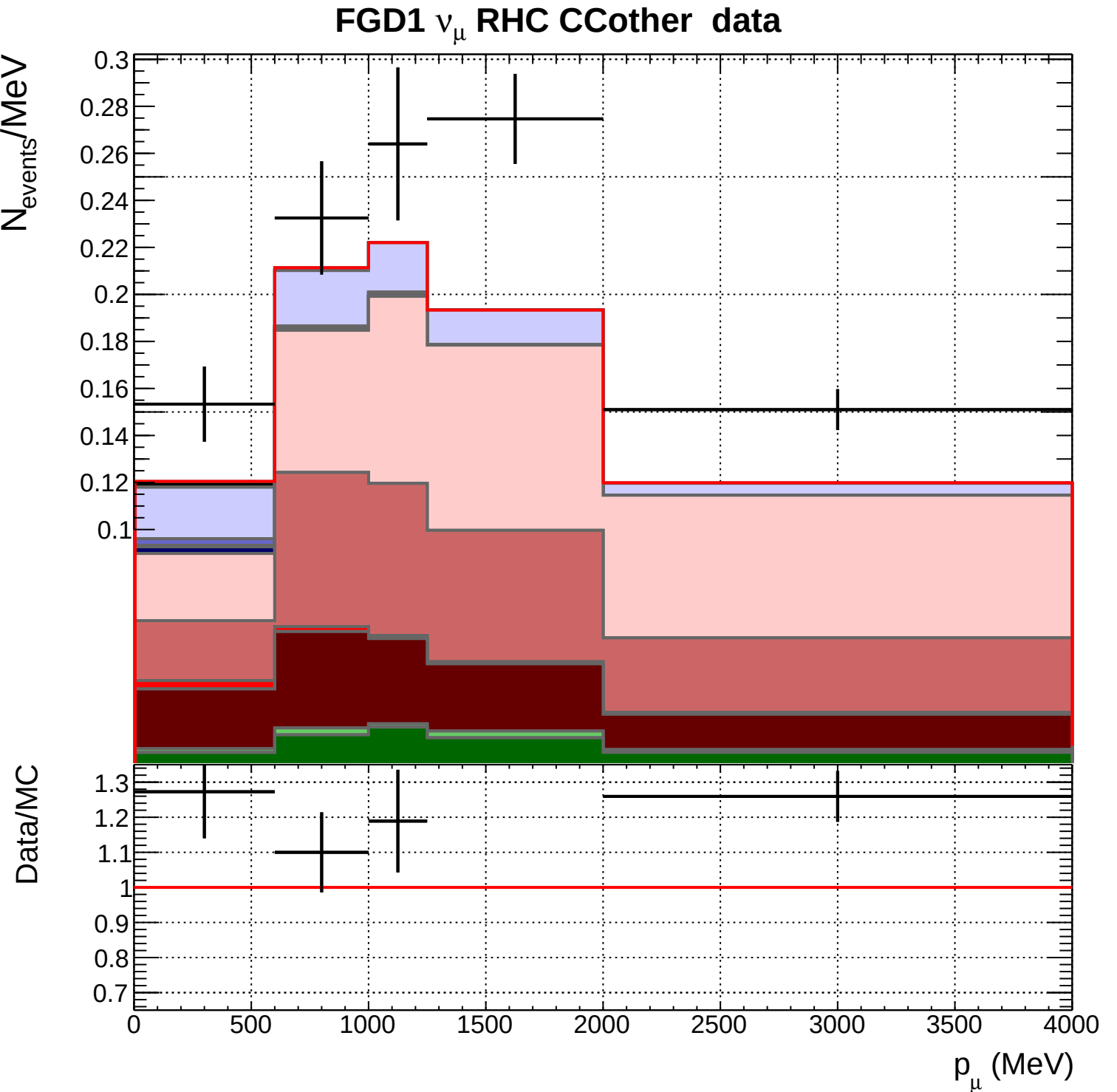

FGD2 anti-ν_μCC other data
N_{events}/1
18000
16000
14000
12000
10000
8000
6000
4000
2000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

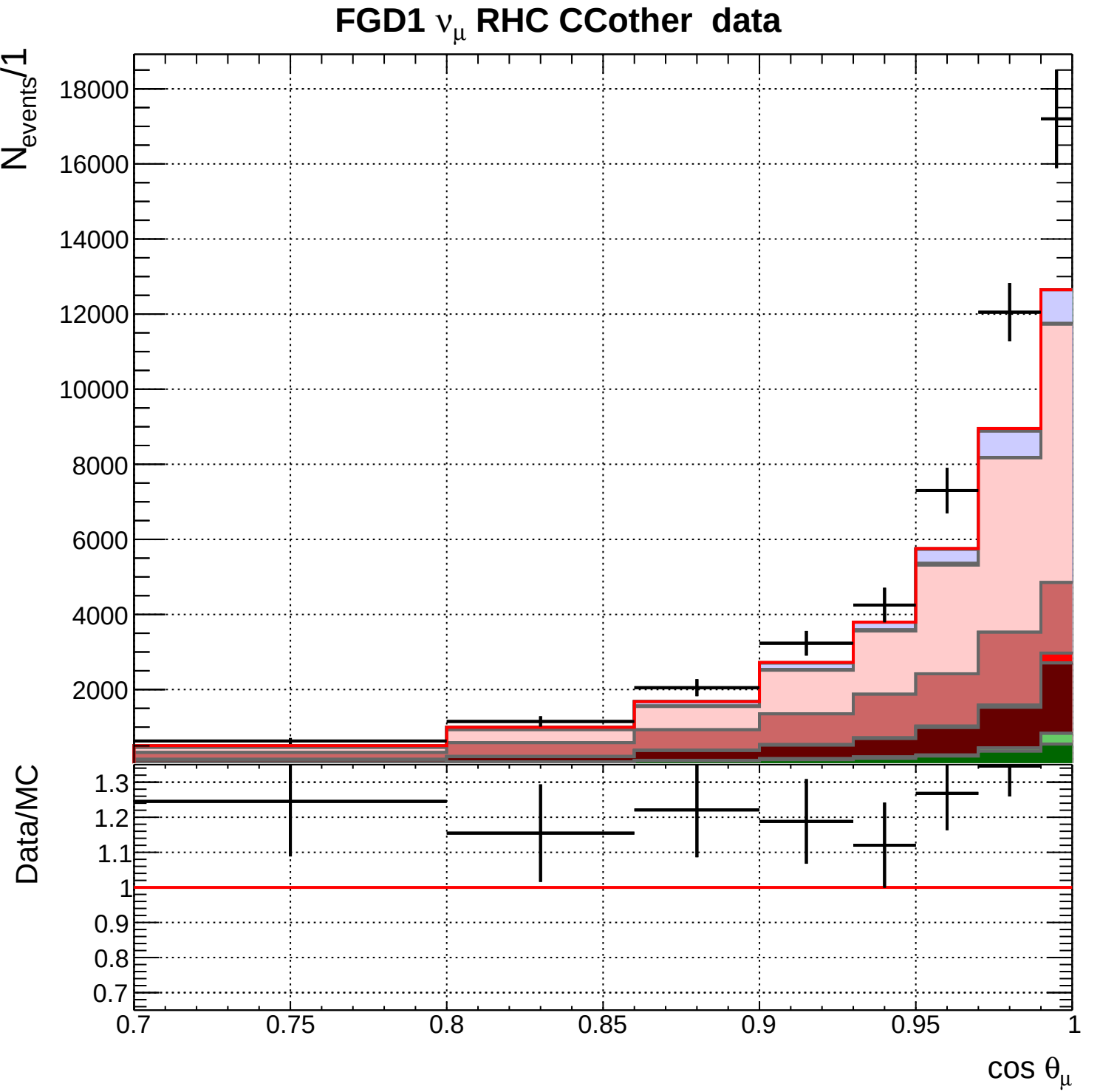

FGD1 ν_μ RHC CC0π data
N_{events}/MeV
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
500
1000
1500
2000
2500
3000
3500
4000
p_μ (MeV)

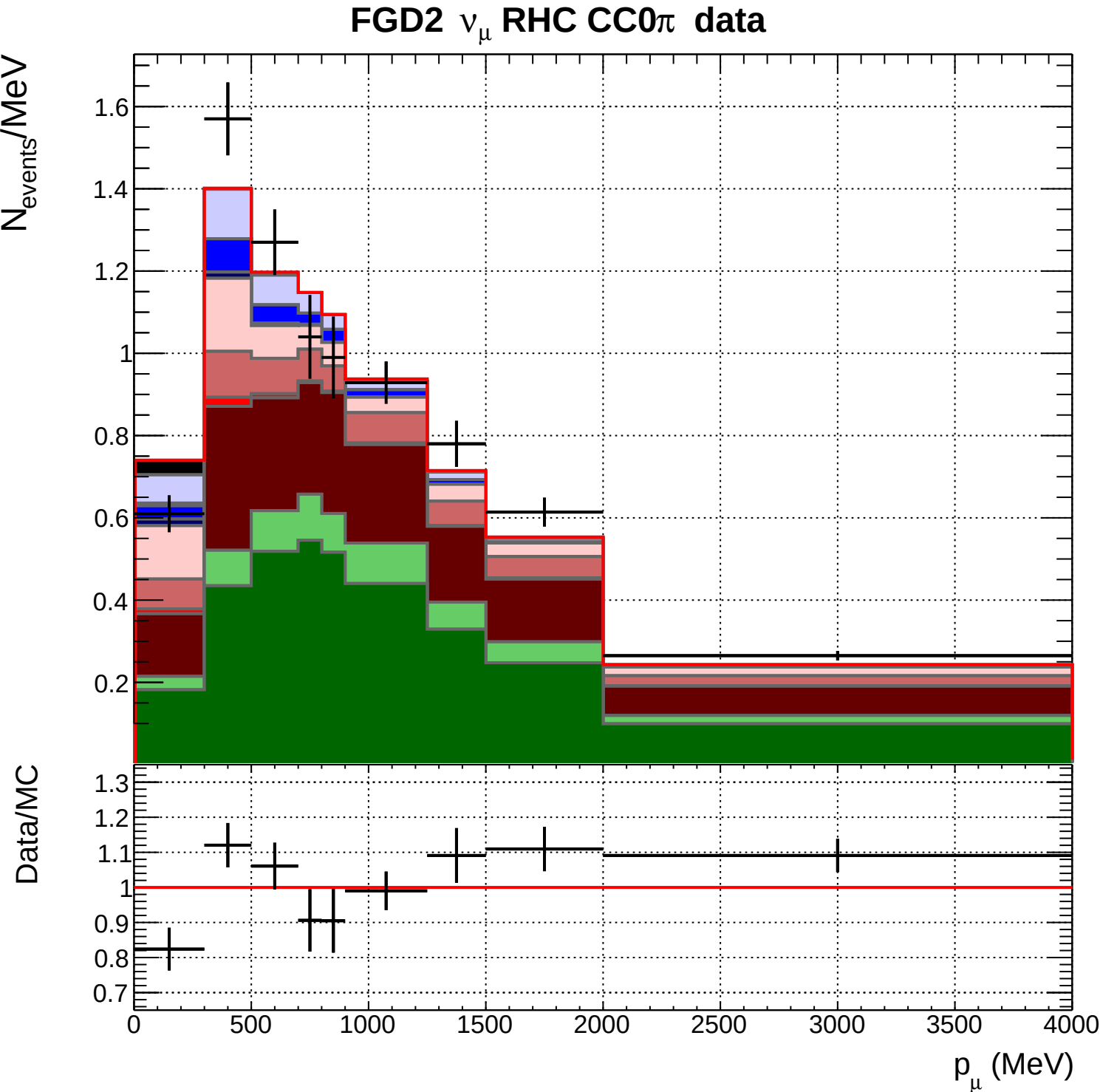

FGD1 ν_μ RHC CC0π data
N_{events}/1
40000
35000
30000
25000
20000
15000
10000
5000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

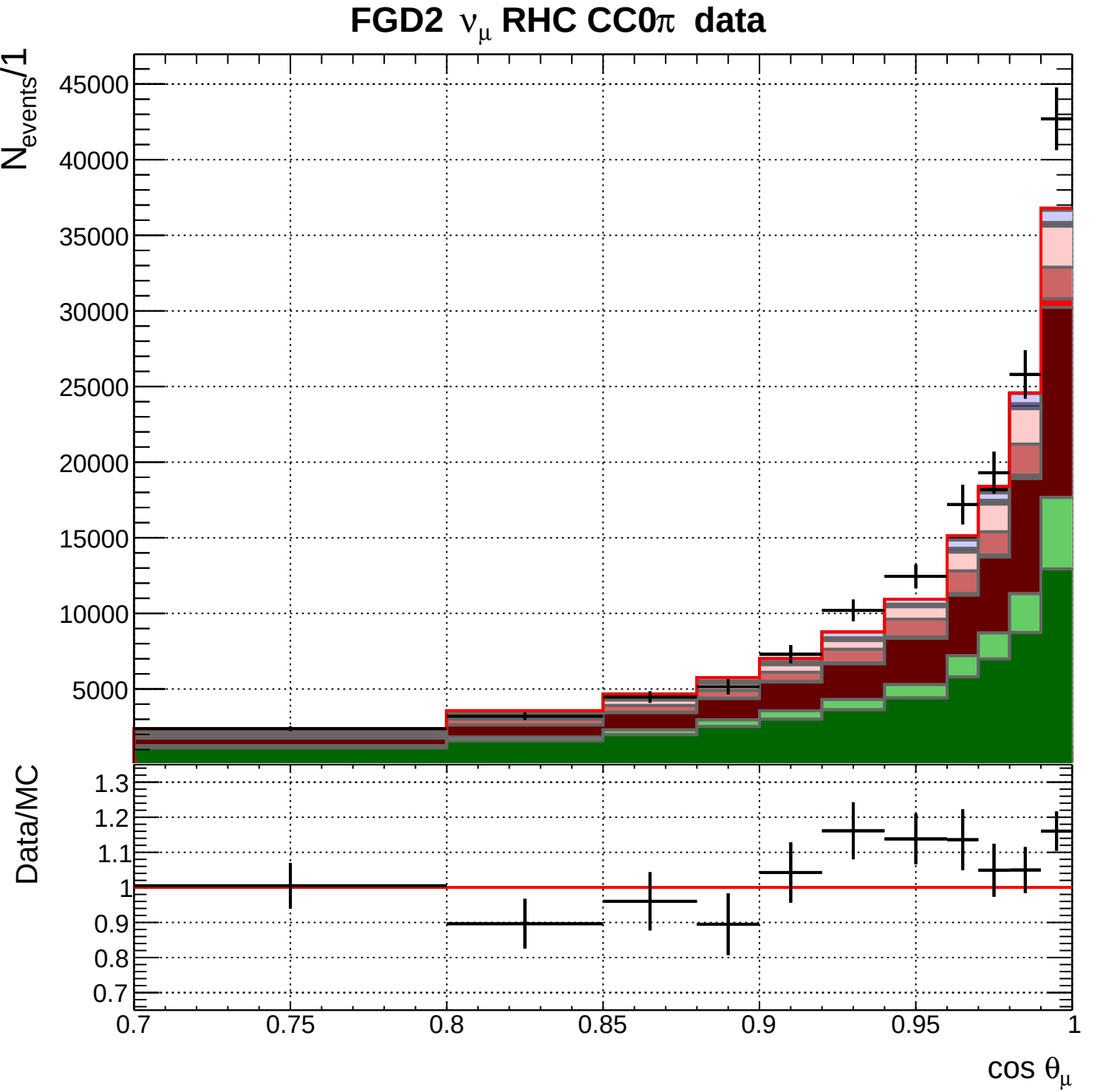

FGD1 ν_μ RHC CC1π data
N_{events}/MeV
0.35
0.3
0.25
0.2
0.15
0.1
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
200
400
600
800
1000
1200
1400
p_μ (MeV)

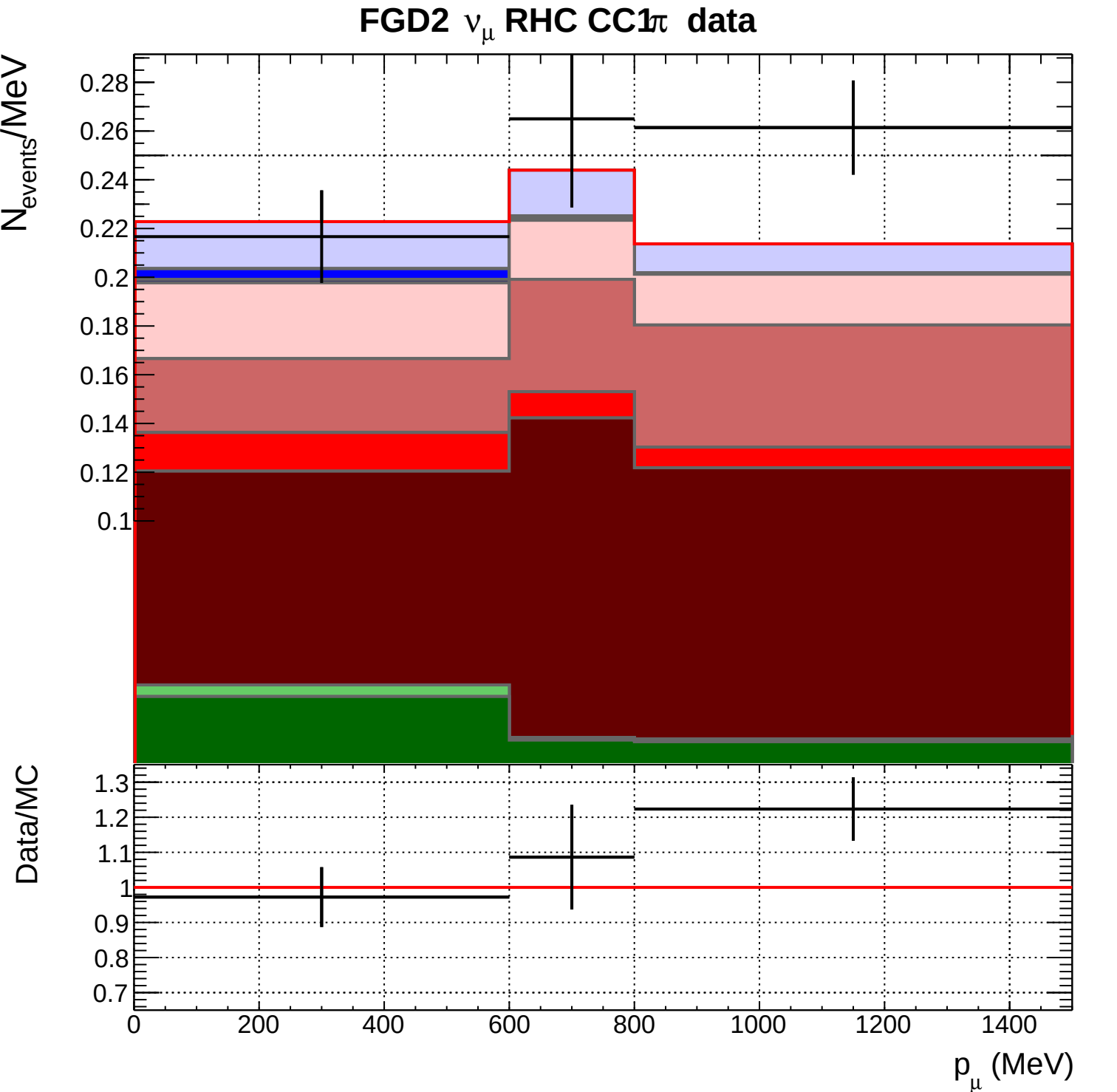

FGD1 ν_μ RHC CC1π data
N_{events}/1
16000
14000
12000
10000
8000
6000
4000
2000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

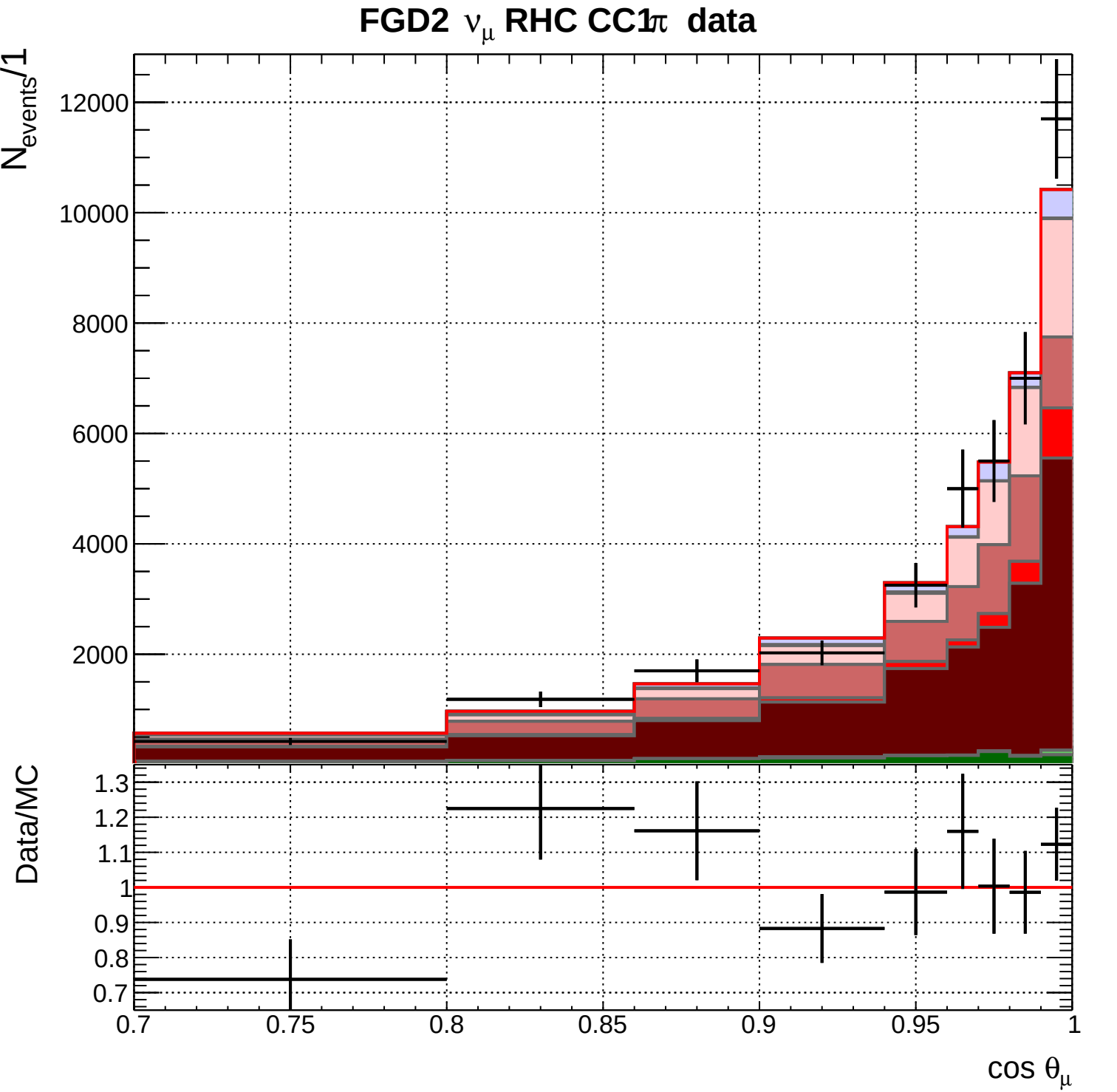

FGD1 ν_μ RHC CCother data
N_{events}/MeV
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
500
1000
1500
2000
2500
3000
3500
4000
p_μ (MeV)

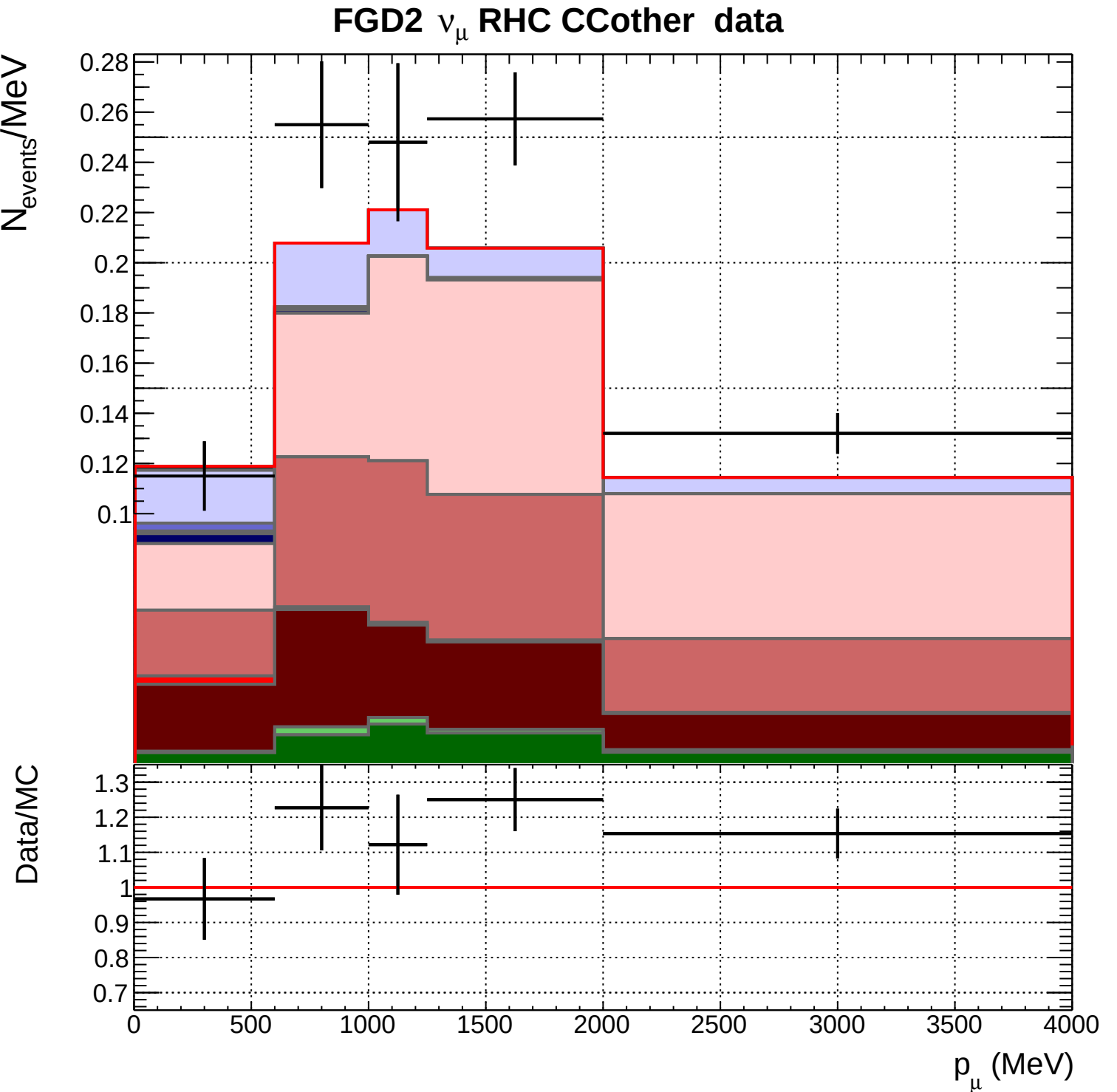

FGD1 ν_μ RHC CCother data
N_{events}/1
18000
16000
14000
12000
10000
8000
6000
4000
2000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ

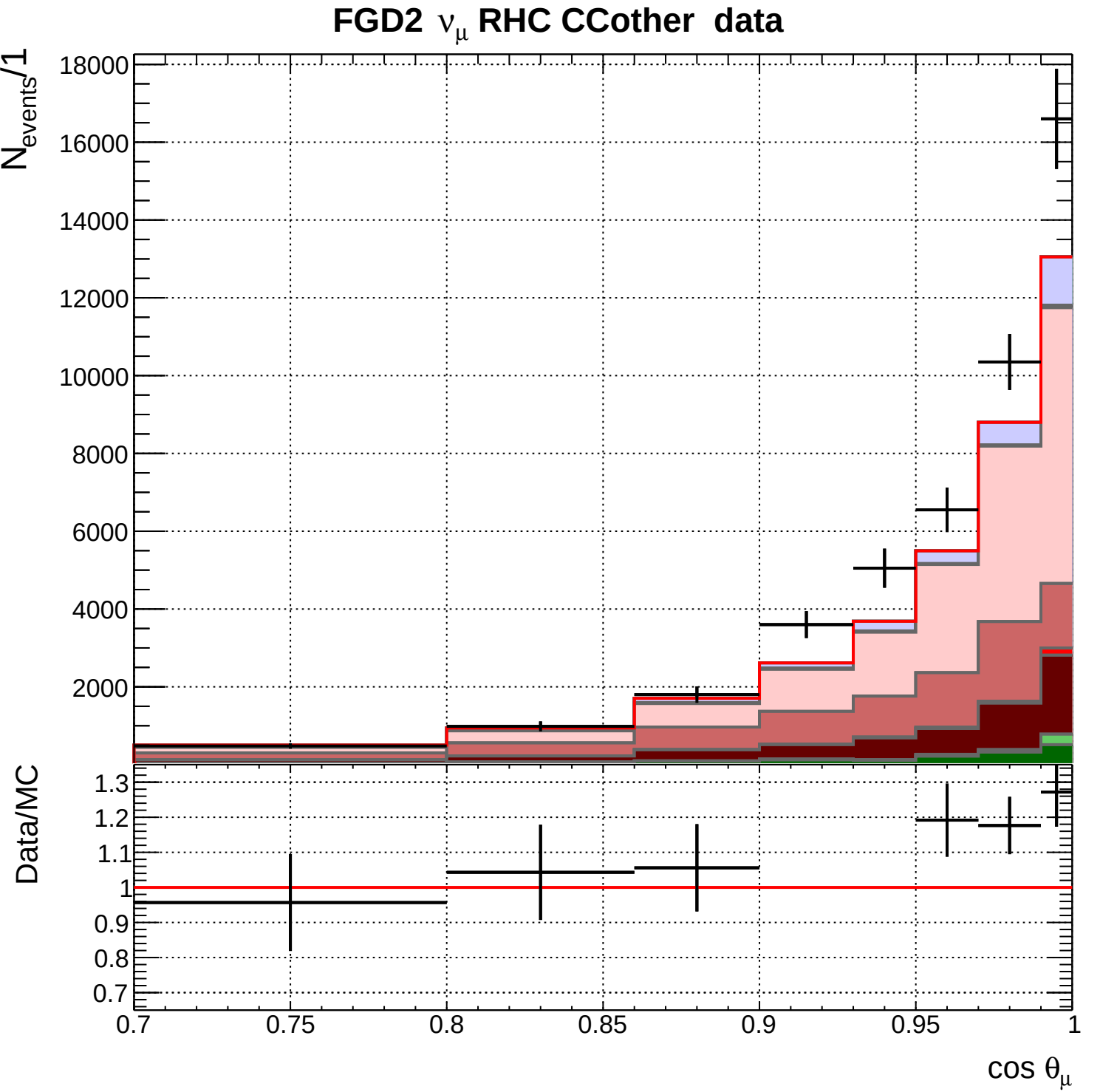

FGD2 ν_μ RHC CC0π data
N_{events}/MeV
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
500
1000
1500
2000
2500
3000
3500
4000
p_μ (MeV)


FGD2 ν_μ RHC CC0π data
N_{events}/1
45000
40000
35000
30000
25000
20000
15000
10000
5000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ


FGD2 ν_μ RHC CC1π data
N_{events}/MeV
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
200
400
600
800
1000
1200
1400
p_μ (MeV)


FGD2 ν_μ RHC CC1π data
N_{events}/1
12000
10000
8000
6000
4000
2000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ


FGD2 ν_μ RHC CCother data
N_{events}/MeV
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0
500
1000
1500
2000
2500
3000
3500
4000
p_μ (MeV)


FGD2 ν_μ RHC CCother data
N_{events}/1
18000
16000
14000
12000
10000
8000
6000
4000
2000
Data/MC
1.3
1.2
1.1
1
0.9
0.8
0.7
0.7
0.75
0.8
0.85
0.9
0.95
1
cos θ_μ