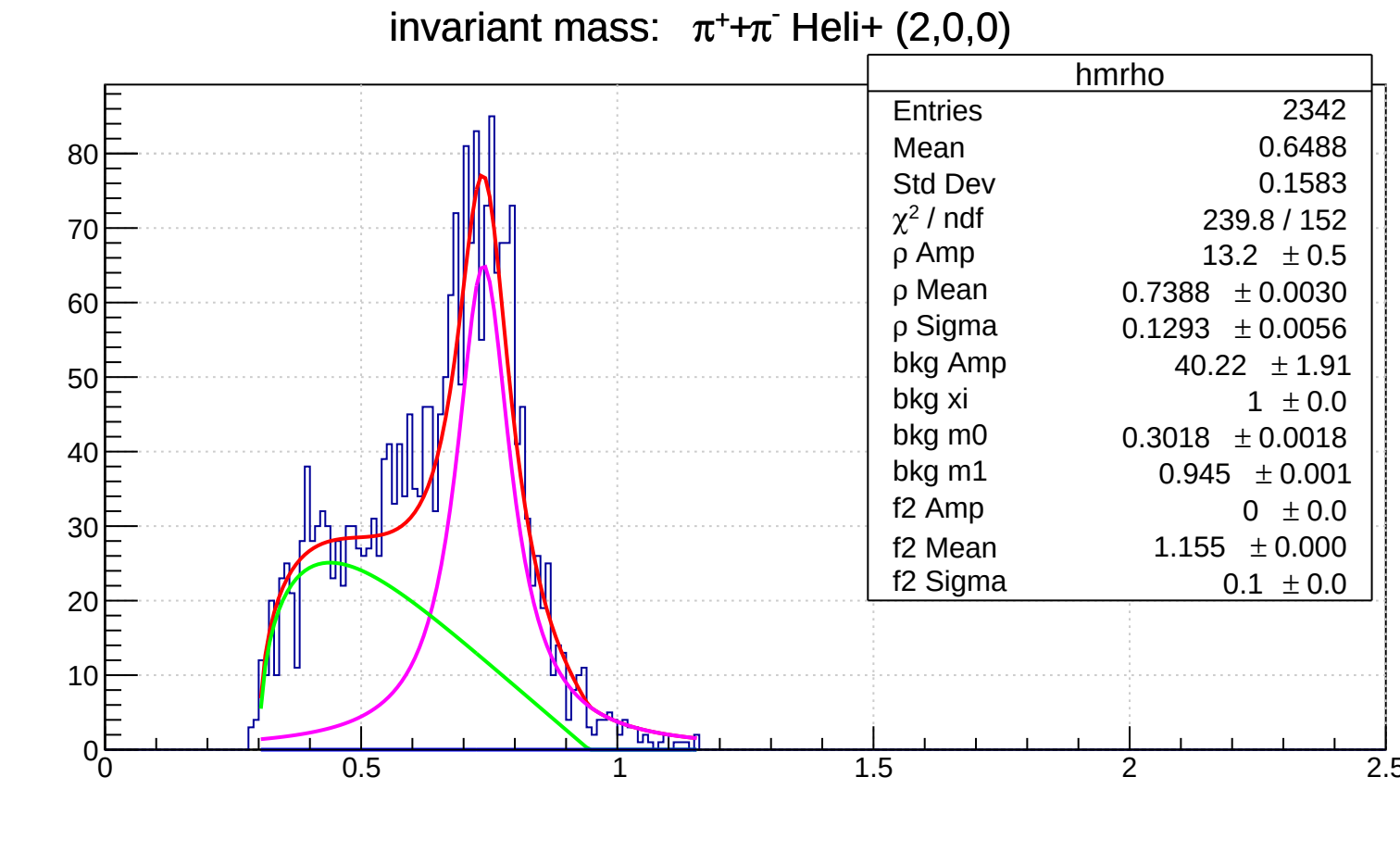
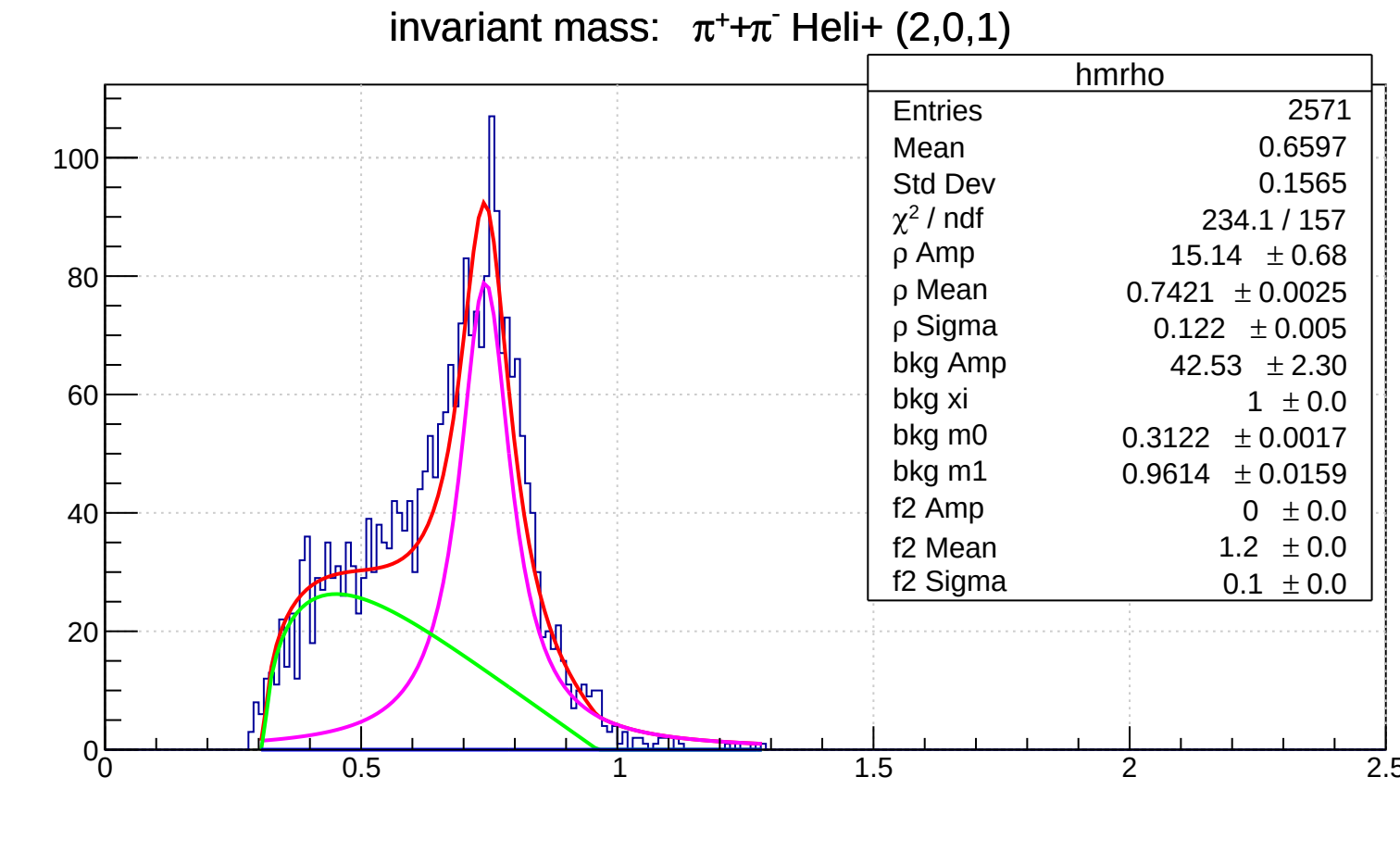

invariant mass: π+π- Heli+ (2,0,0)
hmrho
Entries 2342
Mean 0.6488
Std Dev 0.1583
χ2 / ndf 239.8 / 152
ρ Amp 13.2 ± 0.5
ρ Mean 0.7388 ± 0.0030
ρ Sigma 0.1293 ± 0.0056
bkg Amp 40.22 ± 1.91
bkg xi 1 ± 0.0
bkg m0 0.3018 ± 0.0018
bkg m1 0.945 ± 0.001
f2 Amp 0 ± 0.0
f2 Mean 1.155 ± 0.000
f2 Sigma 0.1 ± 0.0
0
10
20
30
40
50
60
70
80
0
0.5
1
1.5
2
2.5


invariant mass: π+π- Heli+ (2,0,1)
hmrho
Entries 2571
Mean 0.6597
Std Dev 0.1565
χ2 / ndf 234.1 / 157
ρ Amp 15.14 ± 0.68
ρ Mean 0.7421 ± 0.0025
ρ Sigma 0.122 ± 0.005
bkg Amp 42.53 ± 2.30
bkg xi 1 ± 0.0
bkg m0 0.3122 ± 0.0017
bkg m1 0.9614 ± 0.0159
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
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80
100
0
0.5
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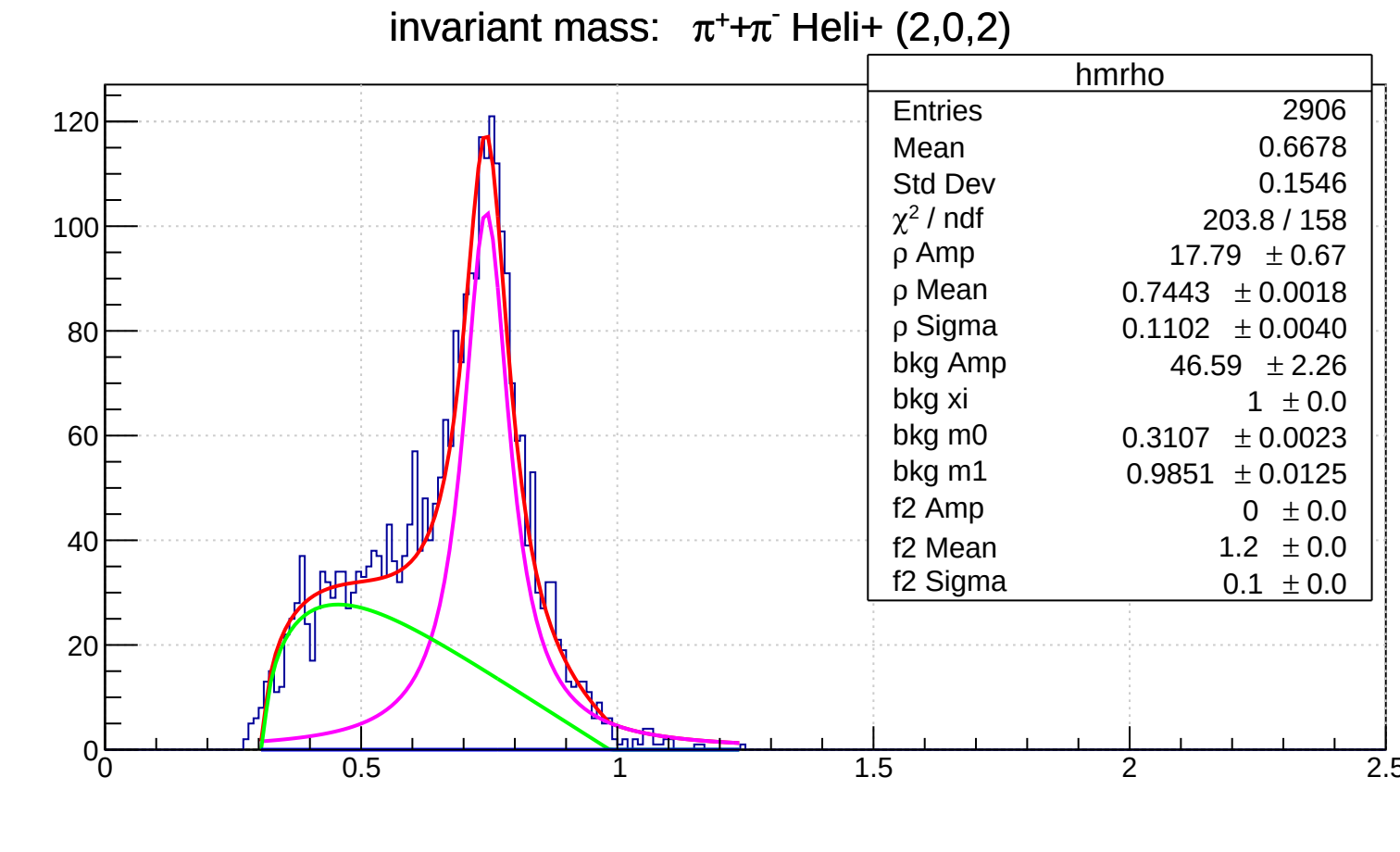
2.5


invariant mass: π+π- Heli+ (2,0,2)
hmrho
Entries 2906
Mean 0.6678
Std Dev 0.1546
χ2 / ndf 203.8 / 158
ρ Amp 17.79 ± 0.67
ρ Mean 0.7443 ± 0.0018
ρ Sigma 0.1102 ± 0.0040
bkg Amp 46.59 ± 2.26
bkg xi 1 ± 0.0
bkg m0 0.3107 ± 0.0023
bkg m1 0.9851 ± 0.0125
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
20
40
60
80
100
120
0
0.5
1
1.5
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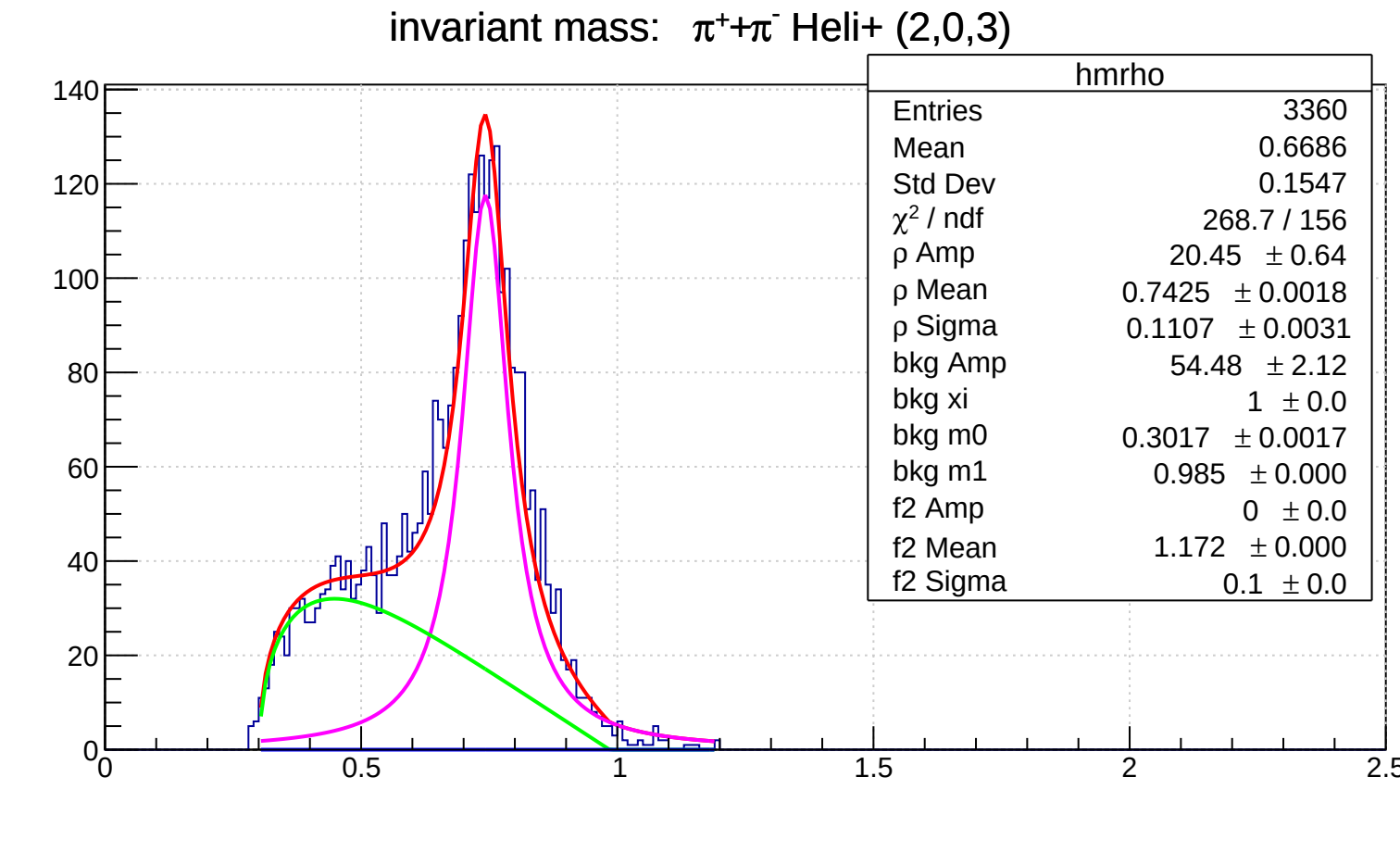
2.5


invariant mass: π+π- Heli+ (2,0,3)
hmrho
Entries 3360
Mean 0.6686
Std Dev 0.1547
χ2 / ndf 268.7 / 156
ρ Amp 20.45 ± 0.64
ρ Mean 0.7425 ± 0.0018
ρ Sigma 0.1107 ± 0.0031
bkg Amp 54.48 ± 2.12
bkg xi 1 ± 0.0
bkg m0 0.3017 ± 0.0017
bkg m1 0.985 ± 0.000
f2 Amp 0 ± 0.0
f2 Mean 1.172 ± 0.000
f2 Sigma 0.1 ± 0.0
0
20
40
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80
100
120
140
0
0.5
1
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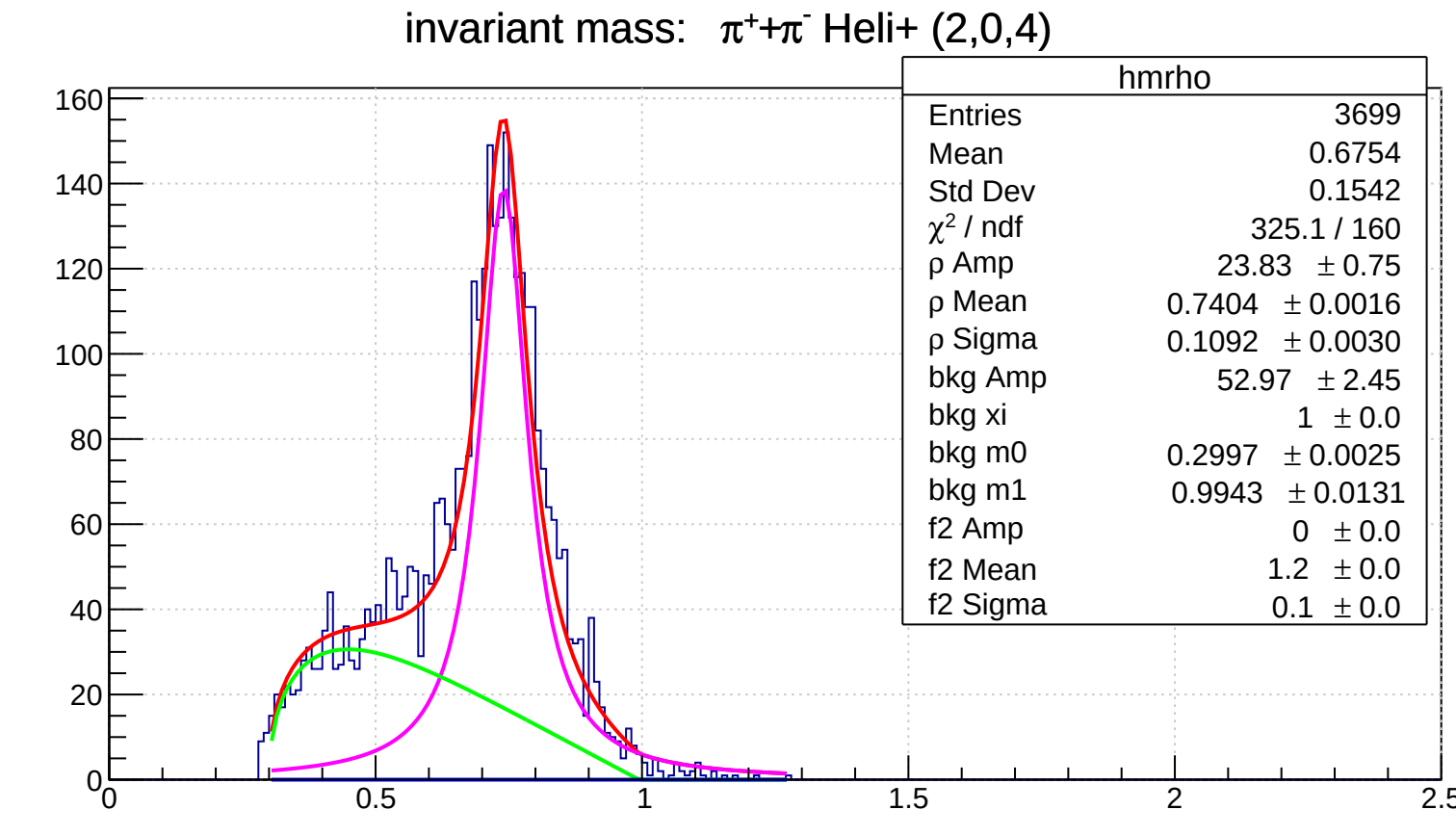
2.5


invariant mass: π+π- Heli+ (2,0,4)
hmrho
Entries 3699
Mean 0.6754
Std Dev 0.1542
χ2 / ndf 325.1 / 160
ρ Amp 23.83 ± 0.75
ρ Mean 0.7404 ± 0.0016
ρ Sigma 0.1092 ± 0.0030
bkg Amp 52.97 ± 2.45
bkg xi 1 ± 0.0
bkg m0 0.2997 ± 0.0025
bkg m1 0.9943 ± 0.0131
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
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40
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100
120
140
160
0
0.5
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1.5
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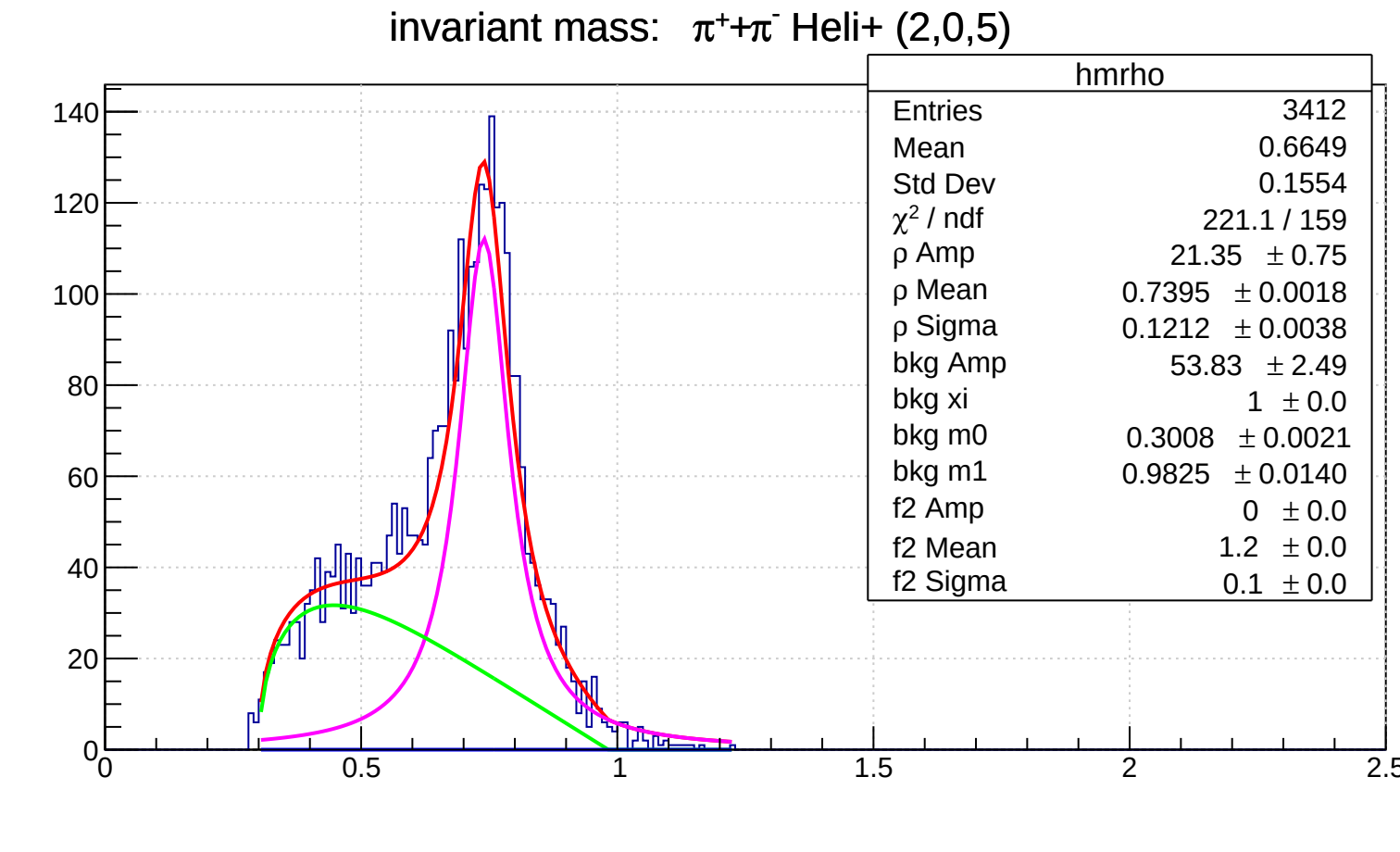
2.5


invariant mass: π⁺+π⁻ Heli+ (2,0,5)
hmrho
Entries 3412
Mean 0.6649
Std Dev 0.1554
χ² / ndf 221.1 / 159
ρ Amp 21.35 ± 0.75
ρ Mean 0.7395 ± 0.0018
ρ Sigma 0.1212 ± 0.0038
bkg Amp 53.83 ± 2.49
bkg xi 1 ± 0.0
bkg m0 0.3008 ± 0.0021
bkg m1 0.9825 ± 0.0140
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
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40
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80
100
120
140
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0.5
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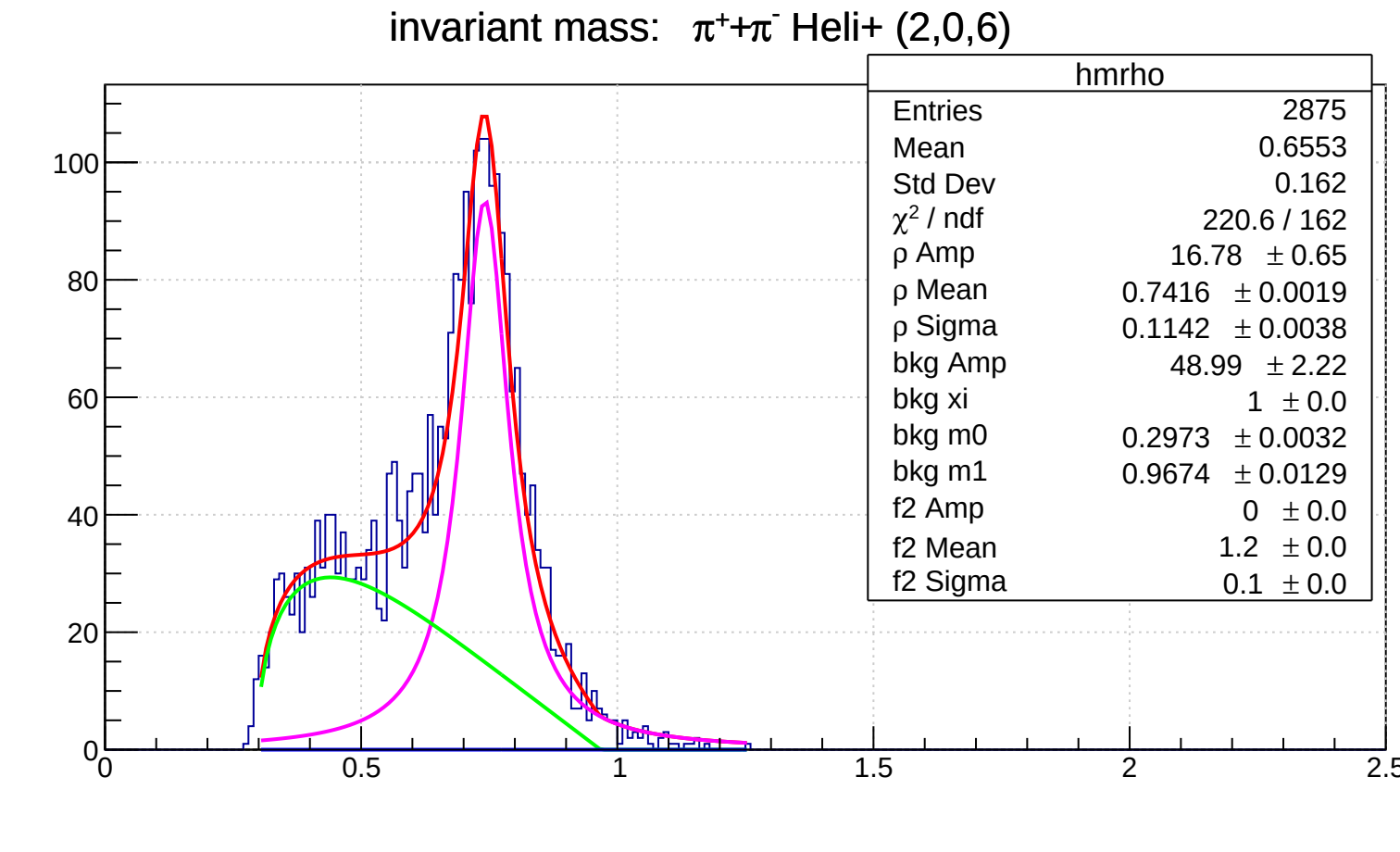
2.5


invariant mass: π⁺+π⁻ Heli+ (2,0,6)
hmrho
Entries 2875
Mean 0.6553
Std Dev 0.162
χ² / ndf 220.6 / 162
ρ Amp 16.78 ± 0.65
ρ Mean 0.7416 ± 0.0019
ρ Sigma 0.1142 ± 0.0038
bkg Amp 48.99 ± 2.22
bkg xi 1 ± 0.0
bkg m0 0.2973 ± 0.0032
bkg m1 0.9674 ± 0.0129
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
20
40
60
80
100
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0.5
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1.5
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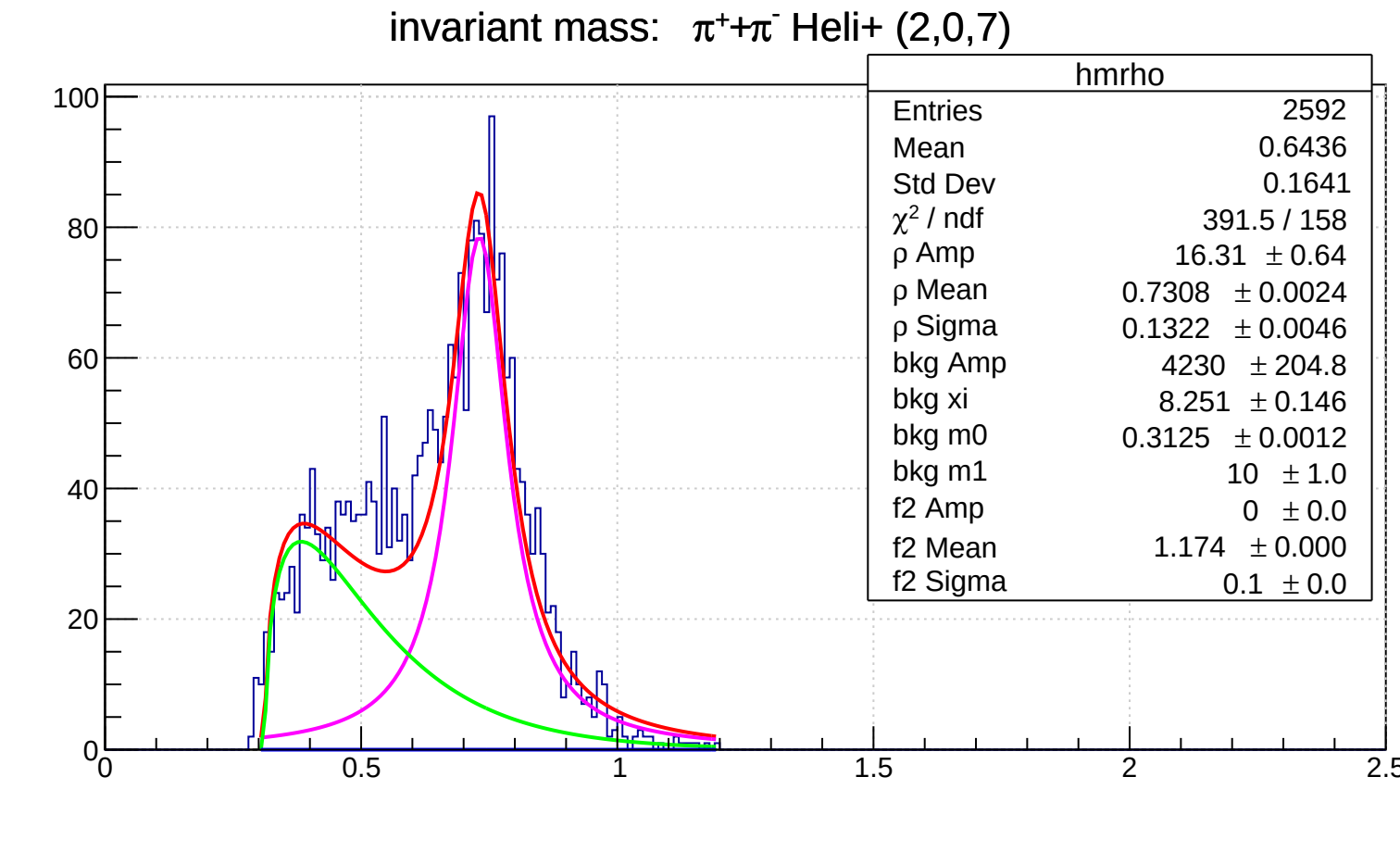
invariant mass: π⁺+π⁻ Heli+ (2,0,7)
hmrho
Entries 2592
Mean 0.6436
Std Dev 0.1641
χ² / ndf 391.5 / 158
ρ Amp 16.31 ± 0.64
ρ Mean 0.7308 ± 0.0024
ρ Sigma 0.1322 ± 0.0046
bkg Amp 4230 ± 204.8
bkg xi 8.251 ± 0.146
bkg m0 0.3125 ± 0.0012
bkg m1 10 ± 1.0
f2 Amp 0 ± 0.0
f2 Mean 1.174 ± 0.000
f2 Sigma 0.1 ± 0.0
0
20
40
60
80
100
0
0.5
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1.5
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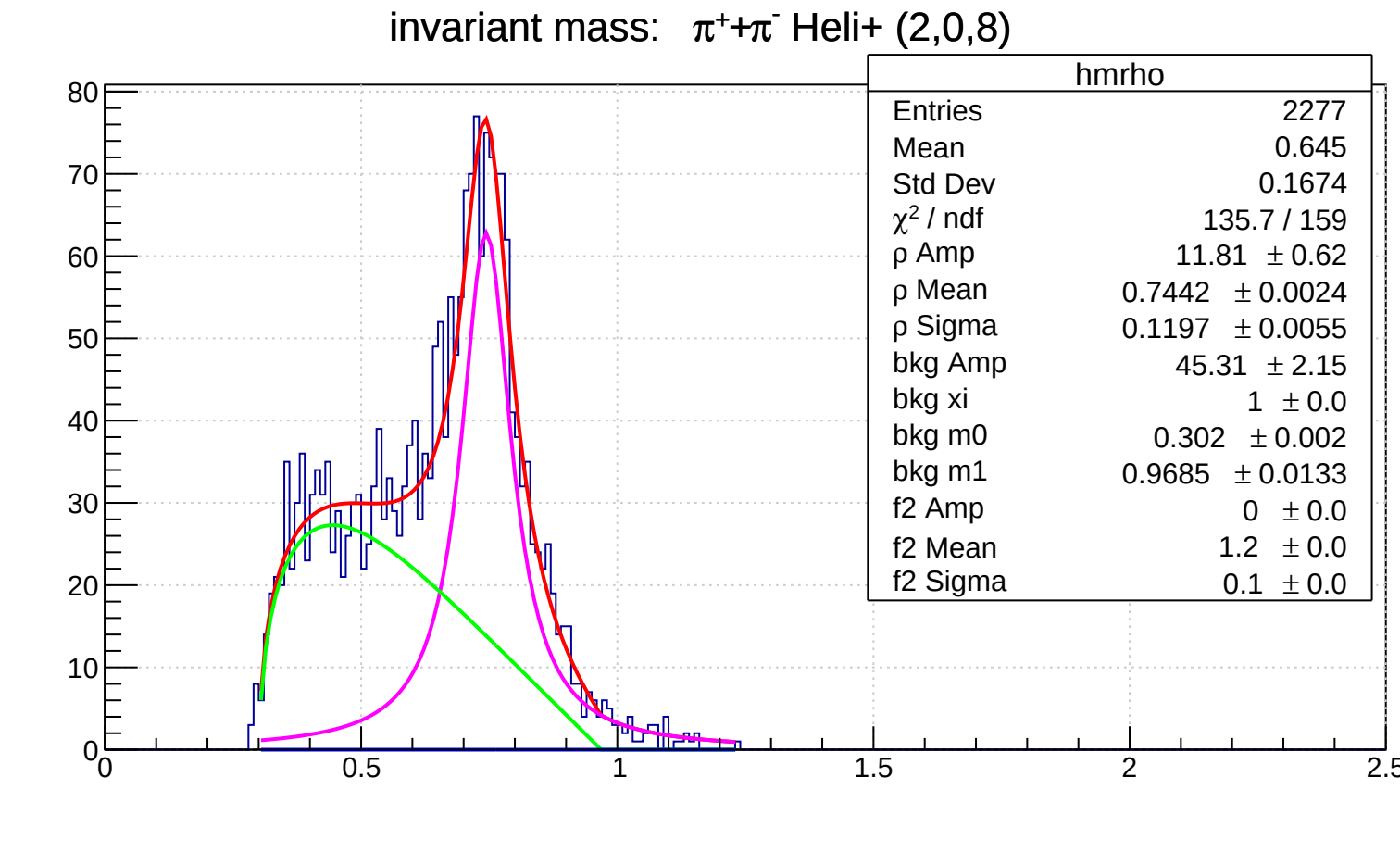
2.5


invariant mass: π⁺+π⁻ Heli+ (2,0,8)
hmrho
Entries 2277
Mean 0.645
Std Dev 0.1674
χ² / ndf 135.7 / 159
ρ Amp 11.81 ± 0.62
ρ Mean 0.7442 ± 0.0024
ρ Sigma 0.1197 ± 0.0055
bkg Amp 45.31 ± 2.15
bkg xi 1 ± 0.0
bkg m0 0.302 ± 0.002
bkg m1 0.9685 ± 0.0133
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
10
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30
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50
60
70
80
0
0.5
1
1.5
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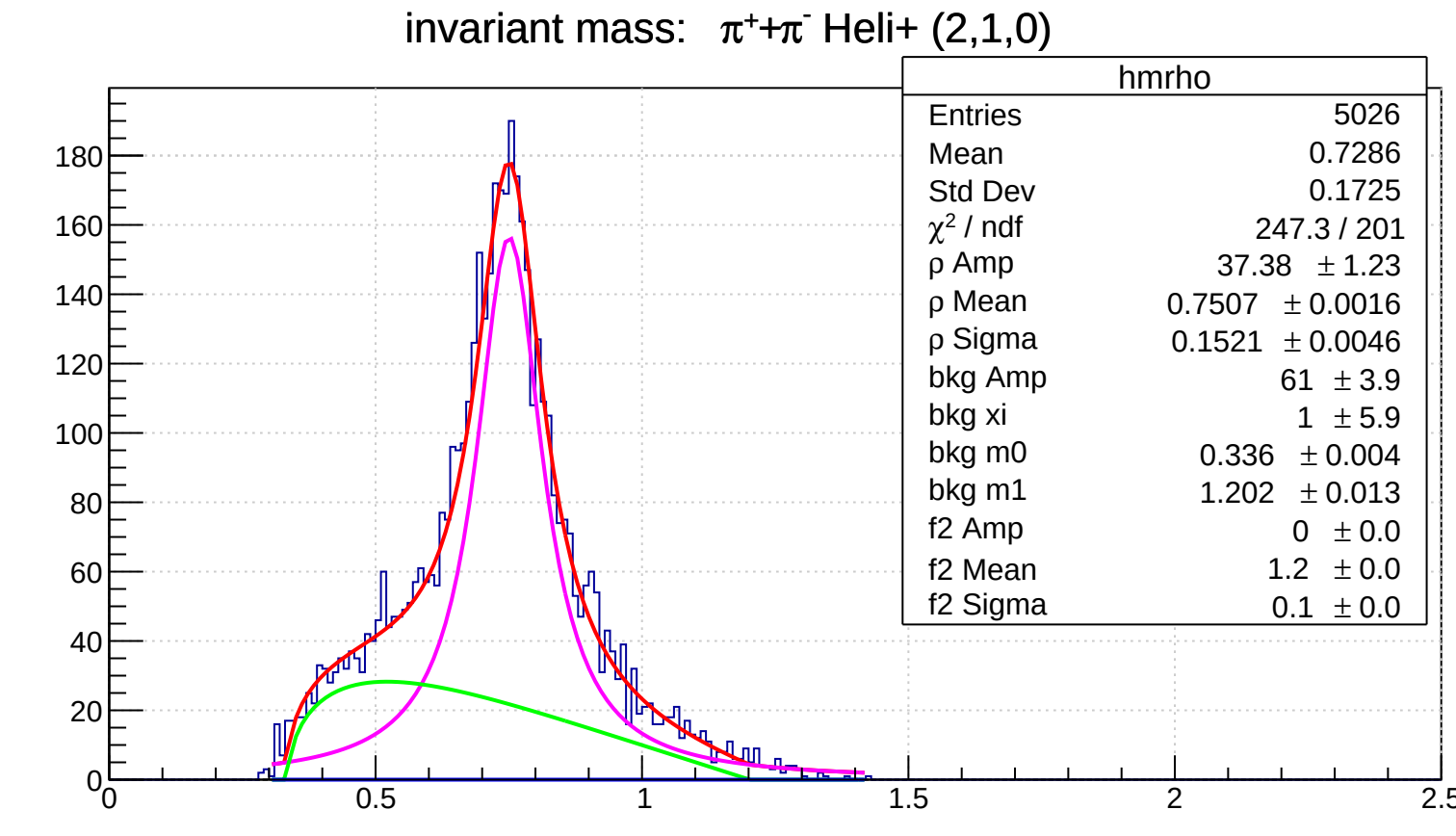
2.5


invariant mass: π⁺+π⁻ Heli+ (2,1,0)
hmrho
Entries 5026
Mean 0.7286
Std Dev 0.1725
χ² / ndf 247.3 / 201
ρ Amp 37.38 ± 1.23
ρ Mean 0.7507 ± 0.0016
ρ Sigma 0.1521 ± 0.0046
bkg Amp 61 ± 3.9
bkg xi 1 ± 5.9
bkg m0 0.336 ± 0.004
bkg m1 1.202 ± 0.013
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
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40
60
80
100
120
140
160
180
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0.5
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1.5
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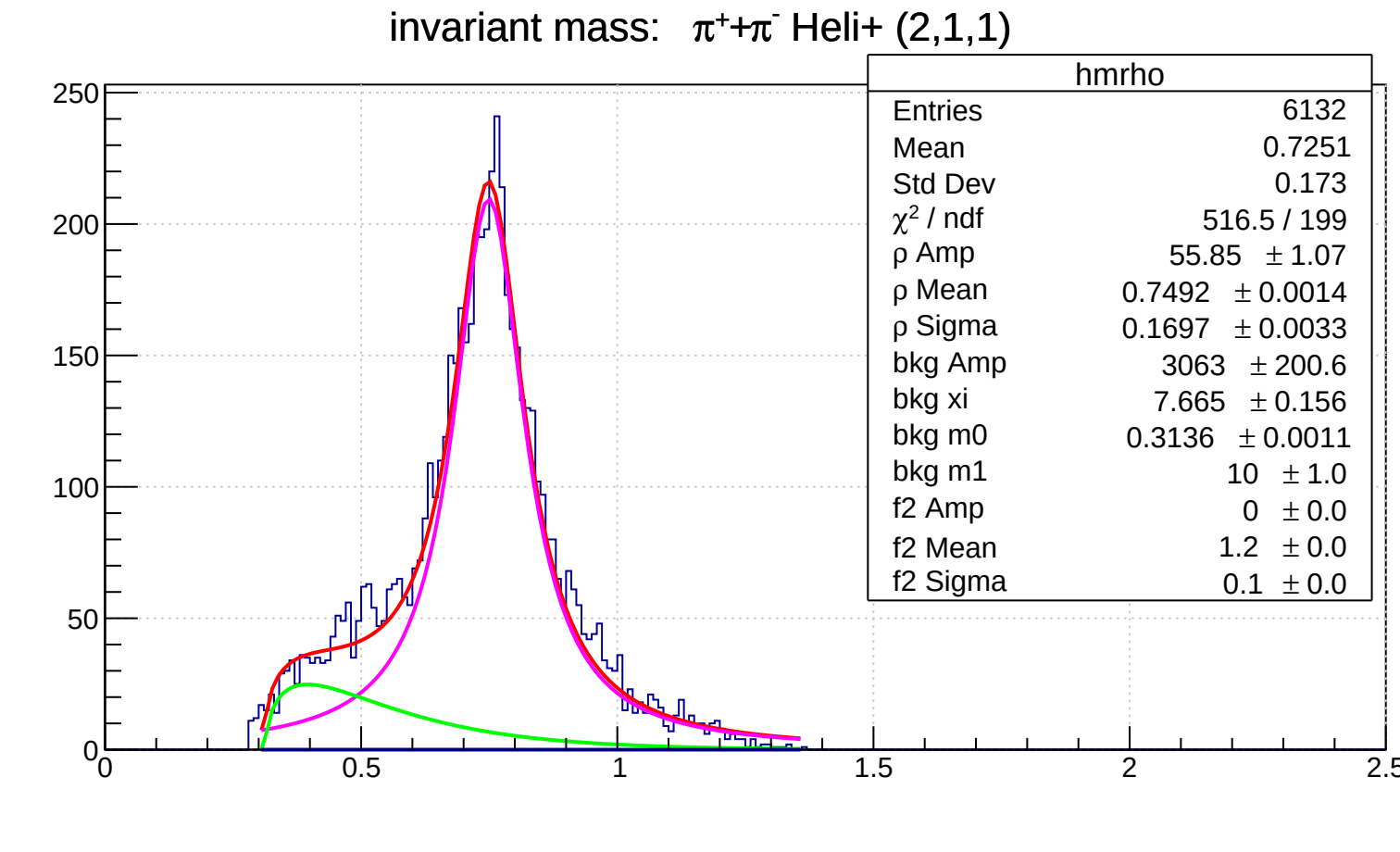
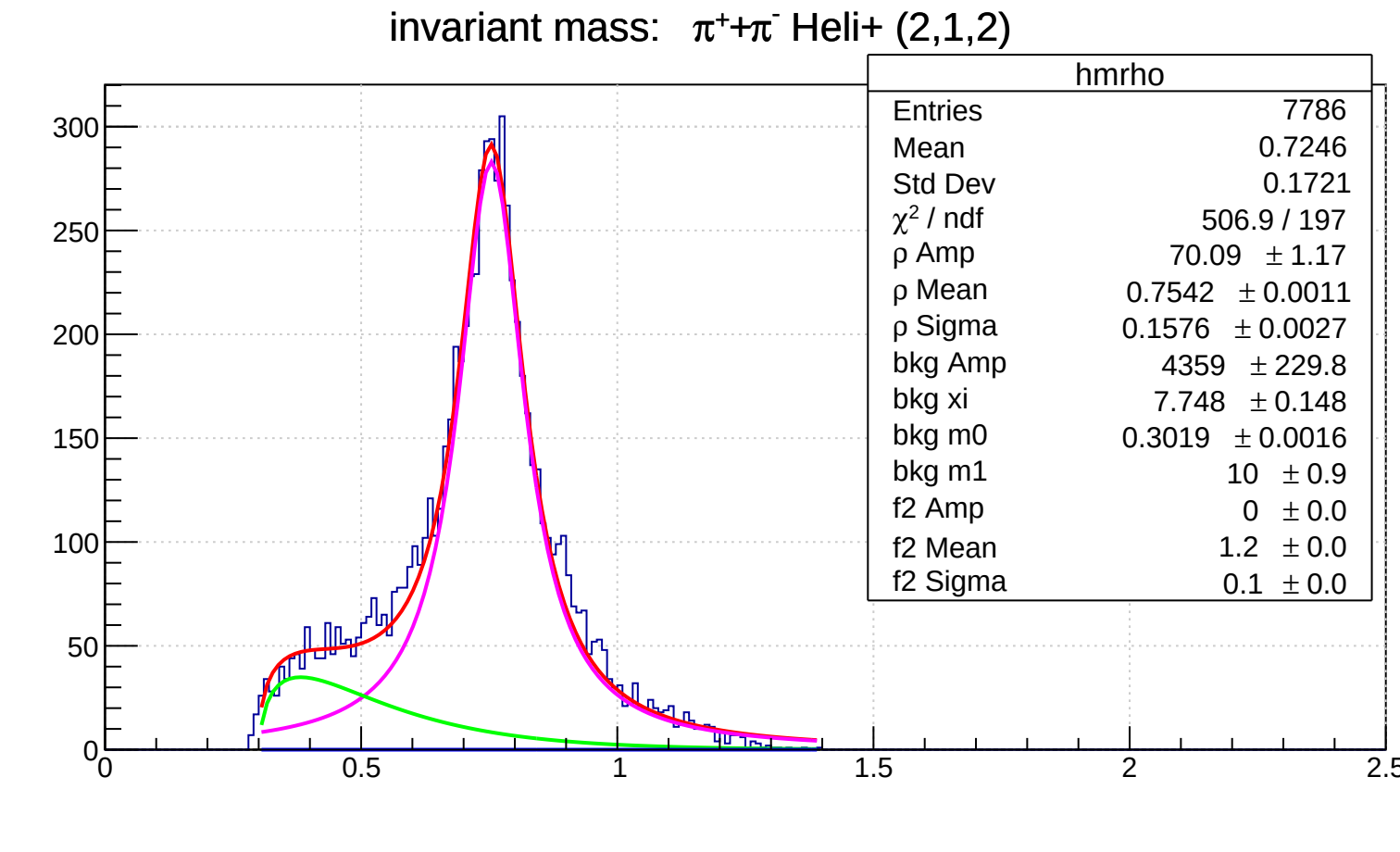
2.5


invariant mass: π+π- Heli+ (2,1,1)
hmrho
Entries 6132
Mean 0.7251
Std Dev 0.173
χ2 / ndf 516.5 / 199
ρ Amp 55.85 ± 1.07
ρ Mean 0.7492 ± 0.0014
ρ Sigma 0.1697 ± 0.0033
bkg Amp 3063 ± 200.6
bkg xi 7.665 ± 0.156
bkg m0 0.3136 ± 0.0011
bkg m1 10 ± 1.0
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
250
200
150
100
50
0
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (2,1,2)
hmrho
Entries 7786
Mean 0.7246
Std Dev 0.1721
χ² / ndf 506.9 / 197
ρ Amp 70.09 ± 1.17
ρ Mean 0.7542 ± 0.0011
ρ Sigma 0.1576 ± 0.0027
bkg Amp 4359 ± 229.8
bkg xi 7.748 ± 0.148
bkg m0 0.3019 ± 0.0016
bkg m1 10 ± 0.9
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
50
100
150
200
250
300
0
0.5
1
1.5
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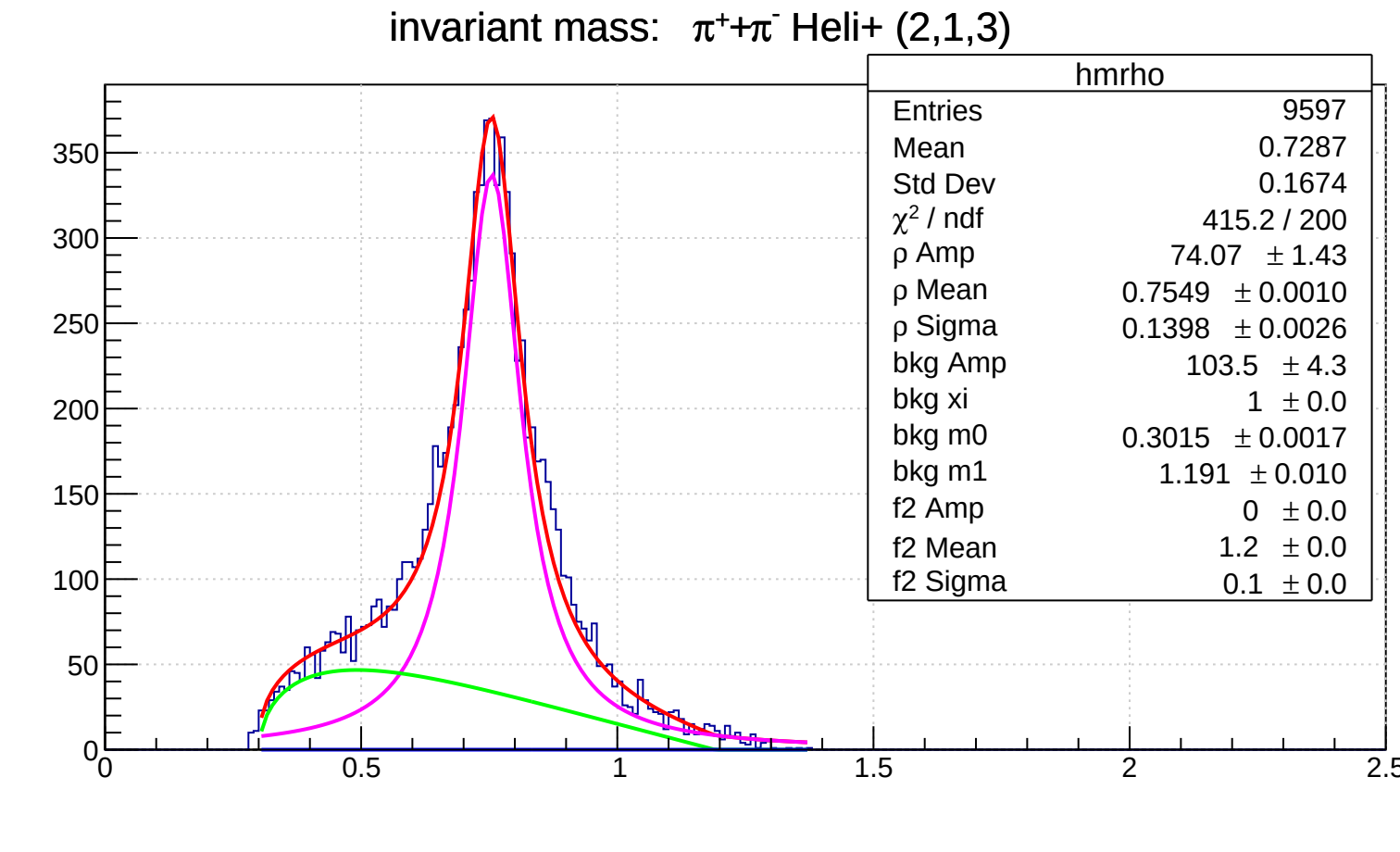
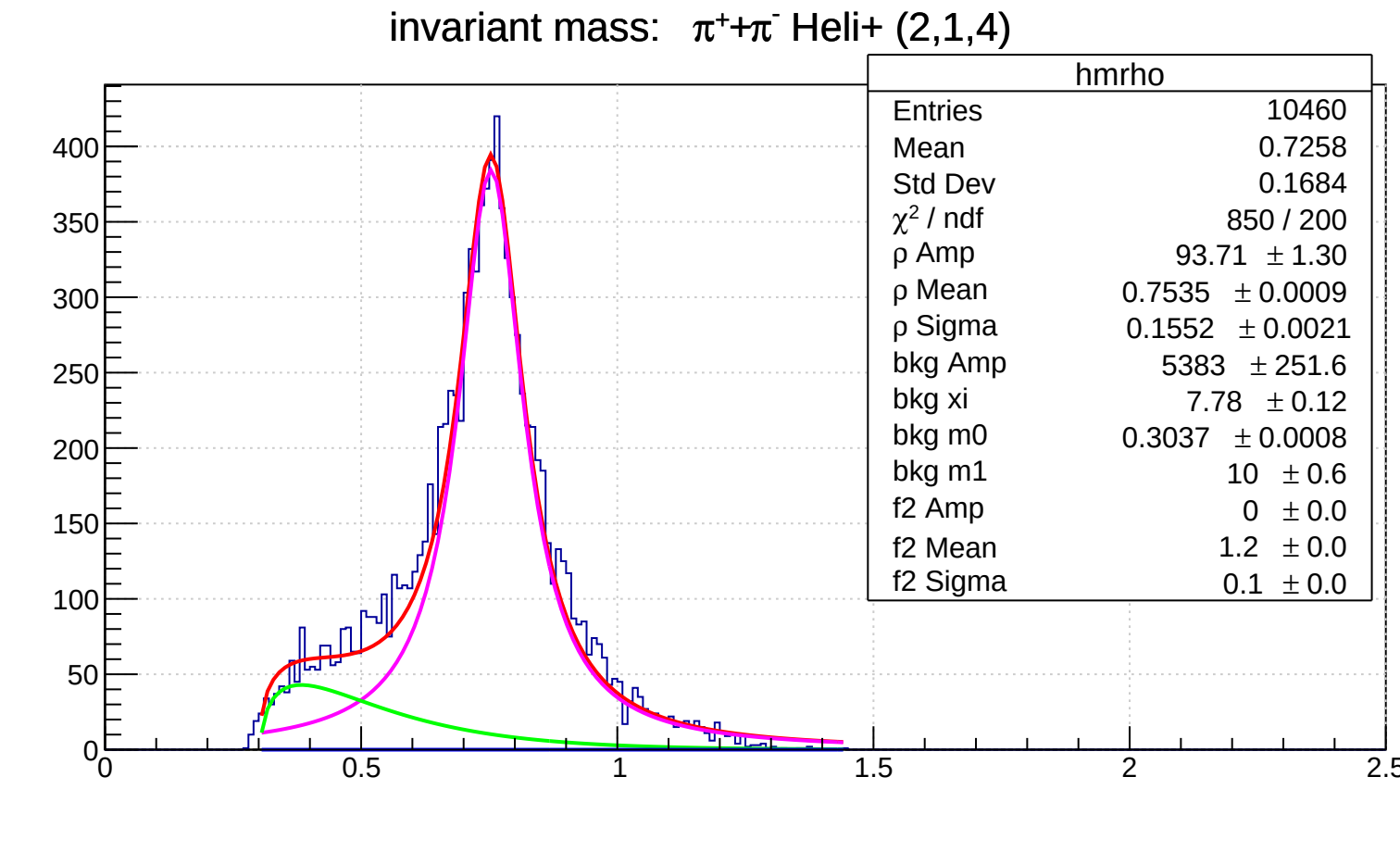
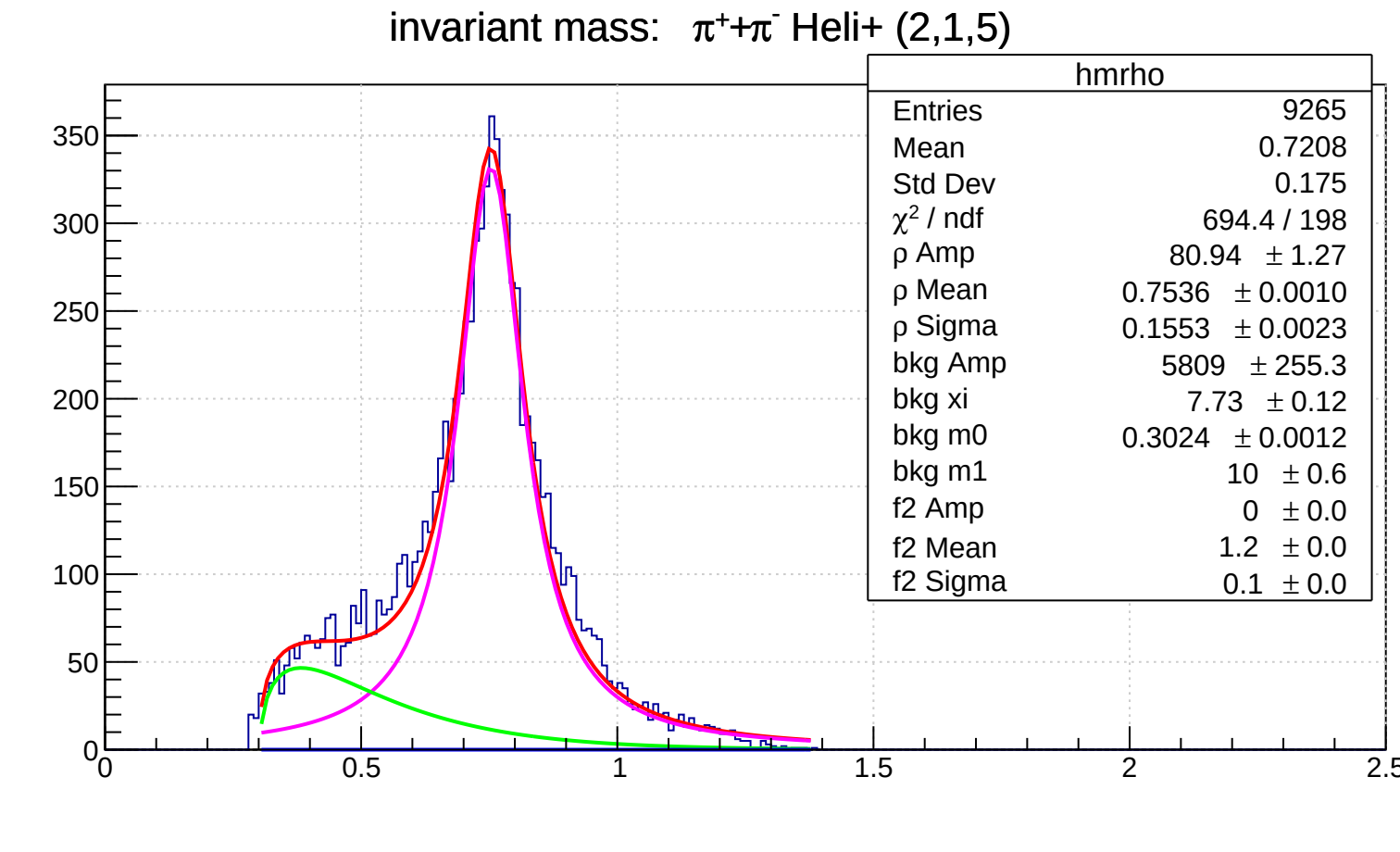
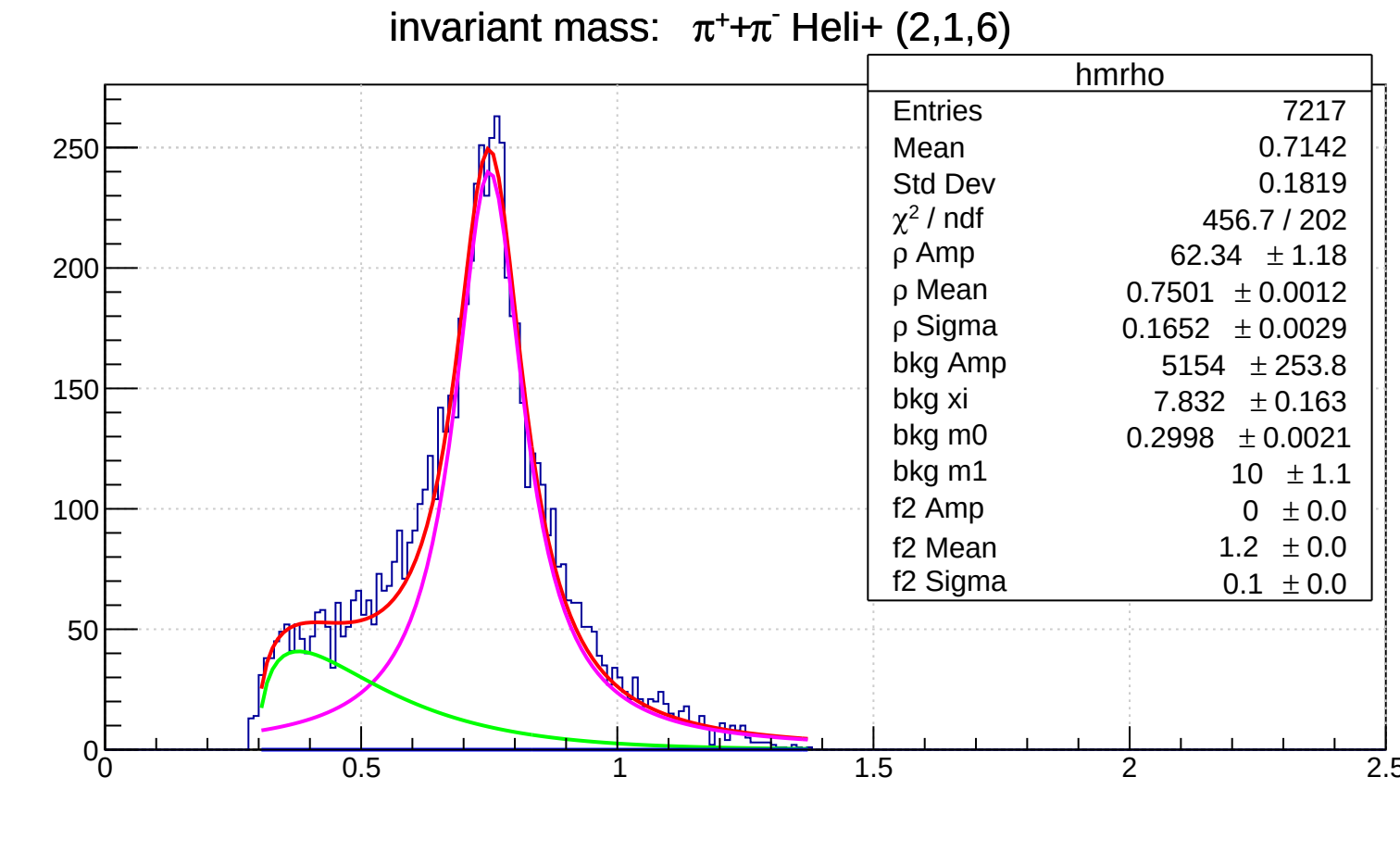
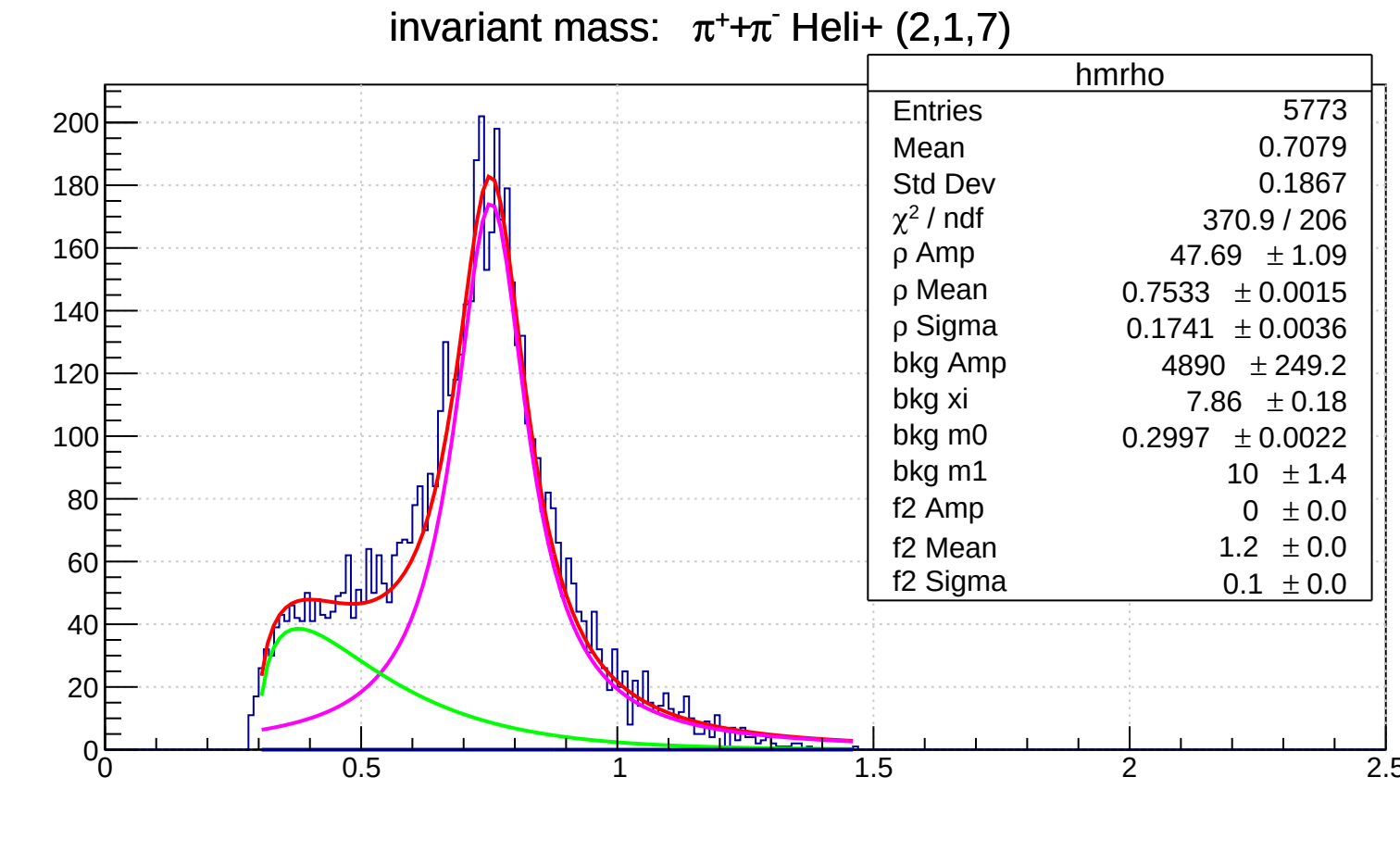
2.5


invariant mass: π⁺+π⁻ Heli+ (2,1,3)
hmrho
Entries 9597
Mean 0.7287
Std Dev 0.1674
χ² / ndf 415.2 / 200
ρ Amp 74.07 ± 1.43
ρ Mean 0.7549 ± 0.0010
ρ Sigma 0.1398 ± 0.0026
bkg Amp 103.5 ± 4.3
bkg xi 1 ± 0.0
bkg m0 0.3015 ± 0.0017
bkg m1 1.191 ± 0.010
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
50
100
150
200
250
300
350
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (2,1,4)
hmrho
Entries 10460
Mean 0.7258
Std Dev 0.1684
χ² / ndf 850 / 200
ρ Amp 93.71 ± 1.30
ρ Mean 0.7535 ± 0.0009
ρ Sigma 0.1552 ± 0.0021
bkg Amp 5383 ± 251.6
bkg xi 7.78 ± 0.12
bkg m0 0.3037 ± 0.0008
bkg m1 10 ± 0.6
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
50
100
150
200
250
300
350
400
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (2,1,5)
hmrho
Entries 9265
Mean 0.7208
Std Dev 0.175
χ² / ndf 694.4 / 198
ρ Amp 80.94 ± 1.27
ρ Mean 0.7536 ± 0.0010
ρ Sigma 0.1553 ± 0.0023
bkg Amp 5809 ± 255.3
bkg xi 7.73 ± 0.12
bkg m0 0.3024 ± 0.0012
bkg m1 10 ± 0.6
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
50
100
150
200
250
300
350
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (2,1,6)
hmrho
Entries 7217
Mean 0.7142
Std Dev 0.1819
χ² / ndf 456.7 / 202
ρ Amp 62.34 ± 1.18
ρ Mean 0.7501 ± 0.0012
ρ Sigma 0.1652 ± 0.0029
bkg Amp 5154 ± 253.8
bkg xi 7.832 ± 0.163
bkg m0 0.2998 ± 0.0021
bkg m1 10 ± 1.1
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
50
100
150
200
250
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (2,1,7)
hmrho
Entries 5773
Mean 0.7079
Std Dev 0.1867
χ² / ndf 370.9 / 206
ρ Amp 47.69 ± 1.09
ρ Mean 0.7533 ± 0.0015
ρ Sigma 0.1741 ± 0.0036
bkg Amp 4890 ± 249.2
bkg xi 7.86 ± 0.18
bkg m0 0.2997 ± 0.0022
bkg m1 10 ± 1.4
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
20
40
60
80
100
120
140
160
180
200
0
0.5
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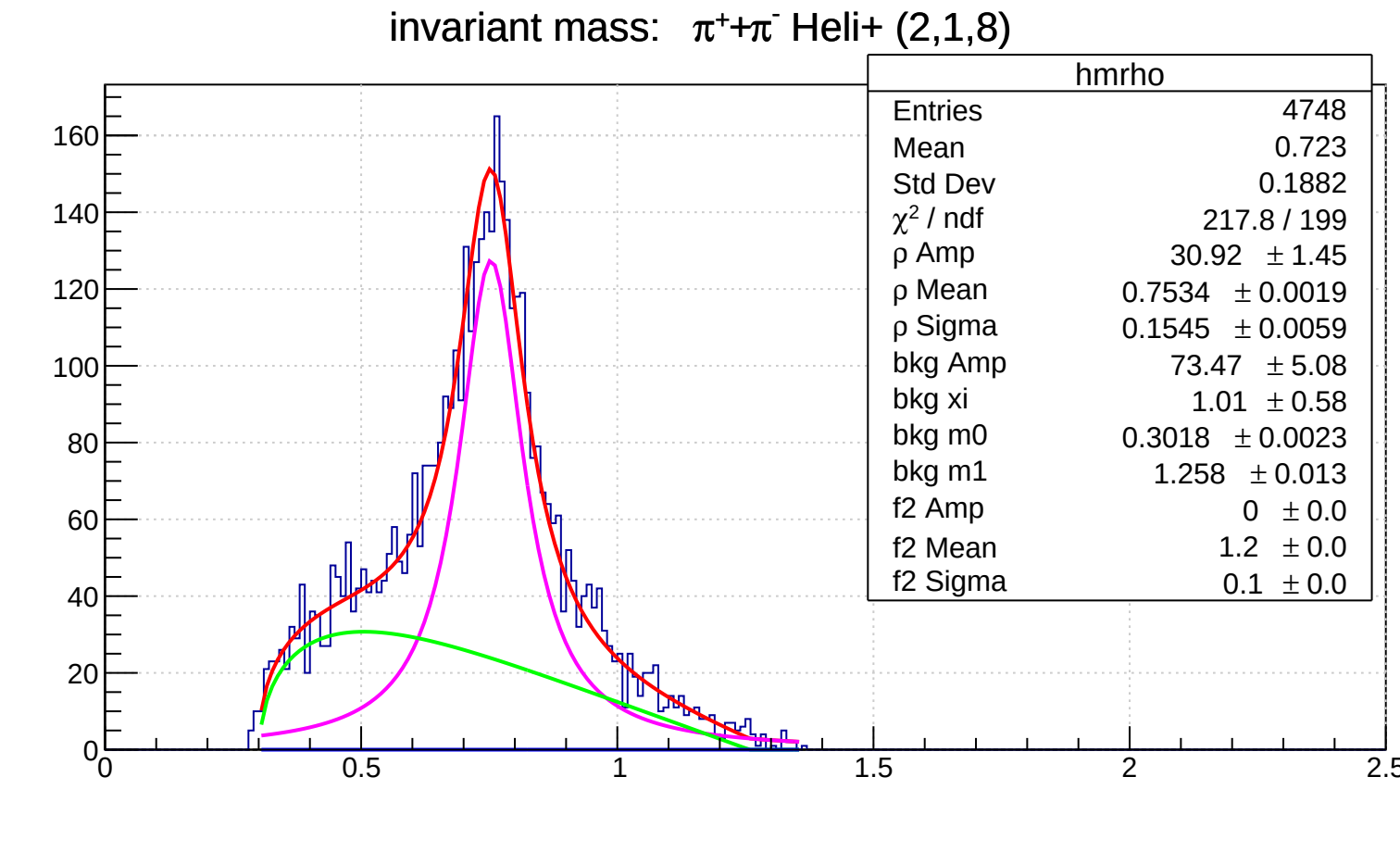
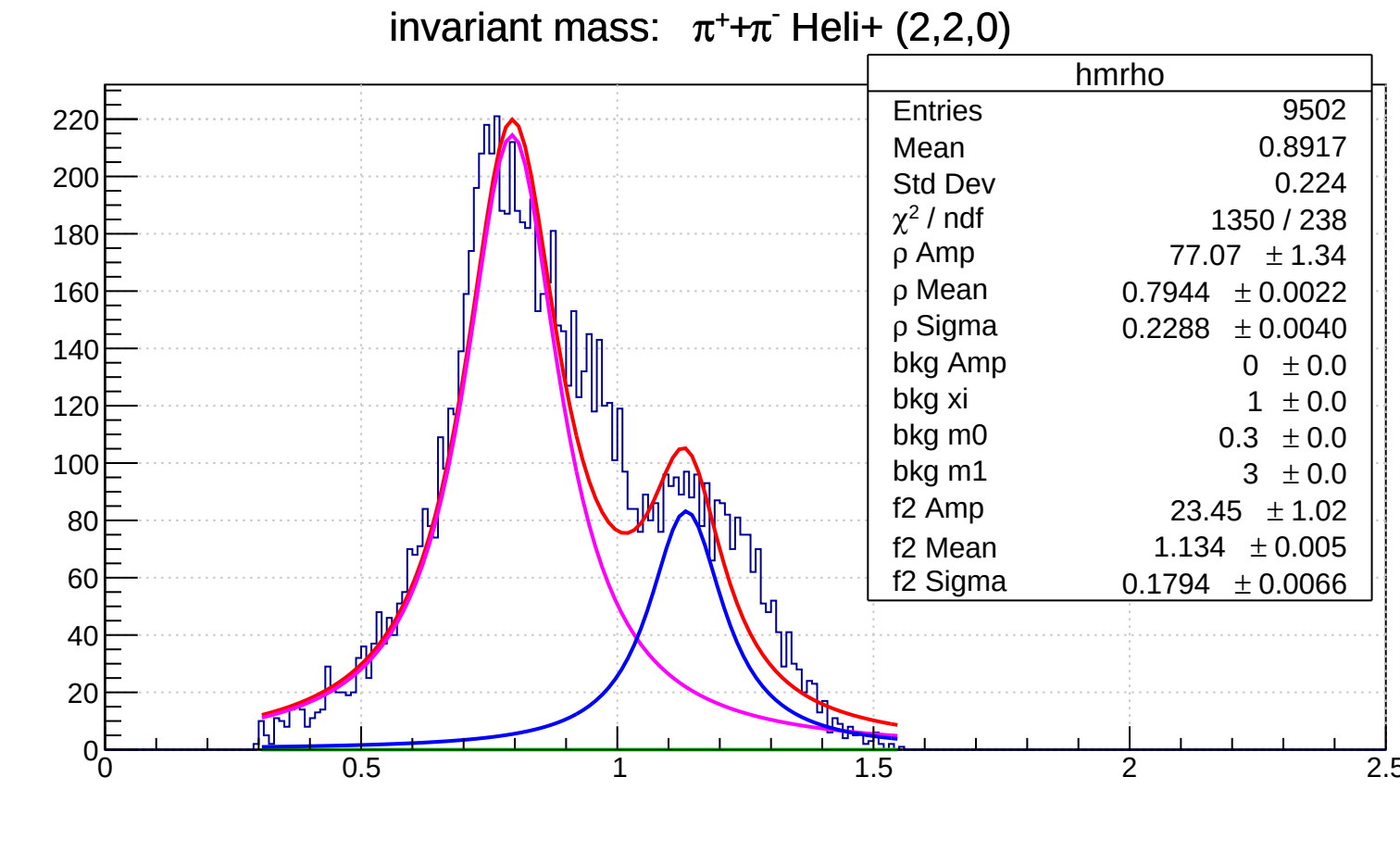
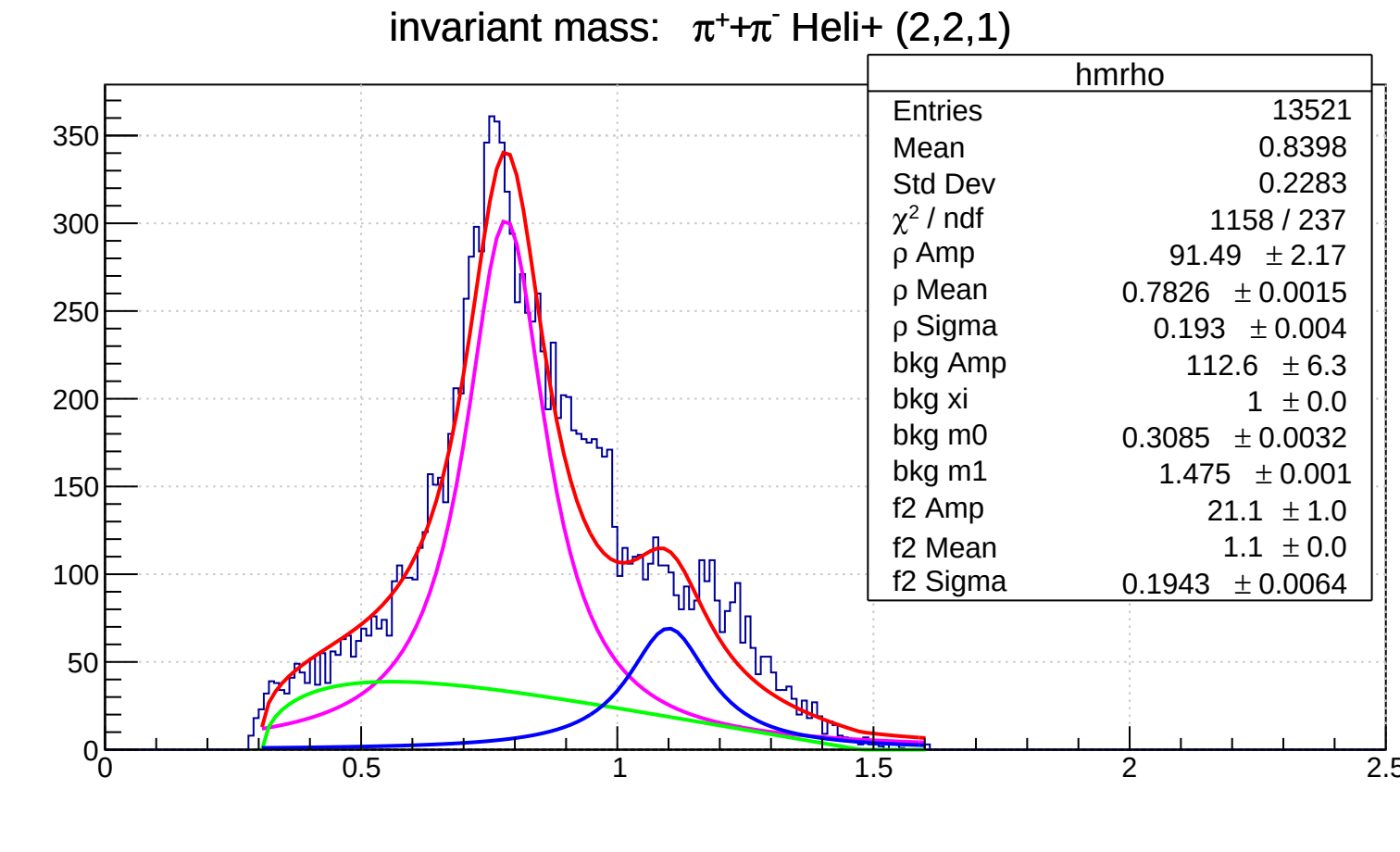
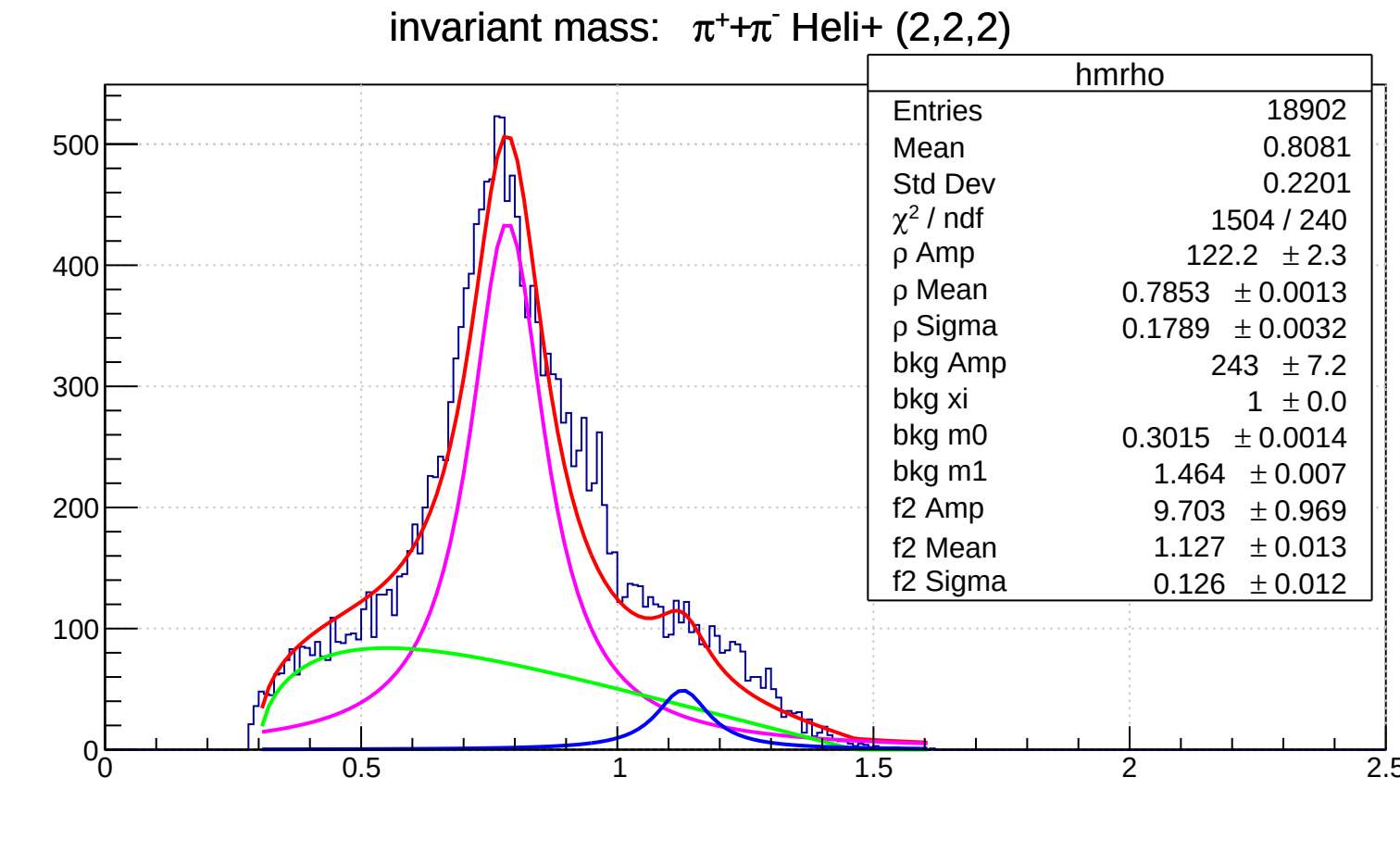
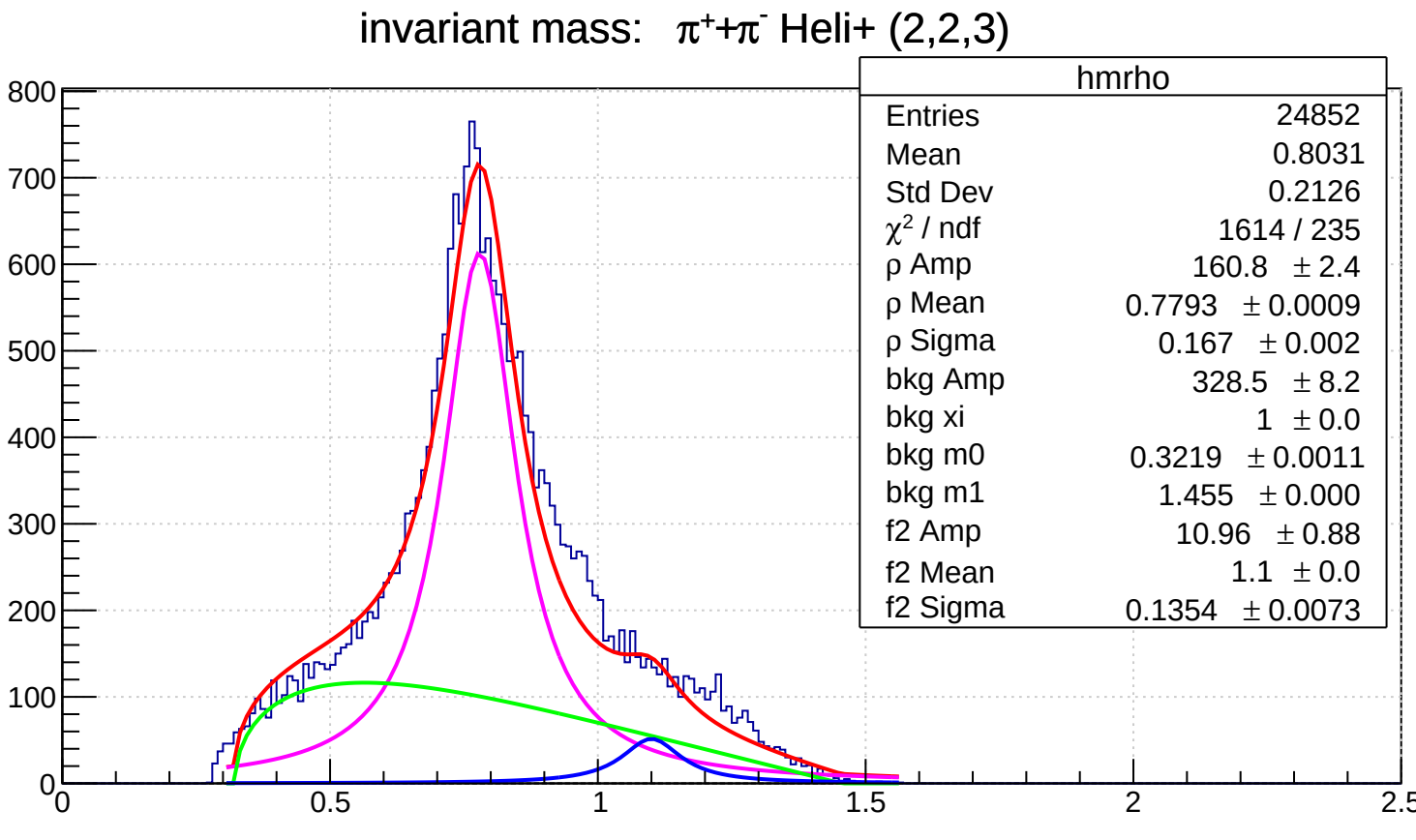
1.5
2
2.5

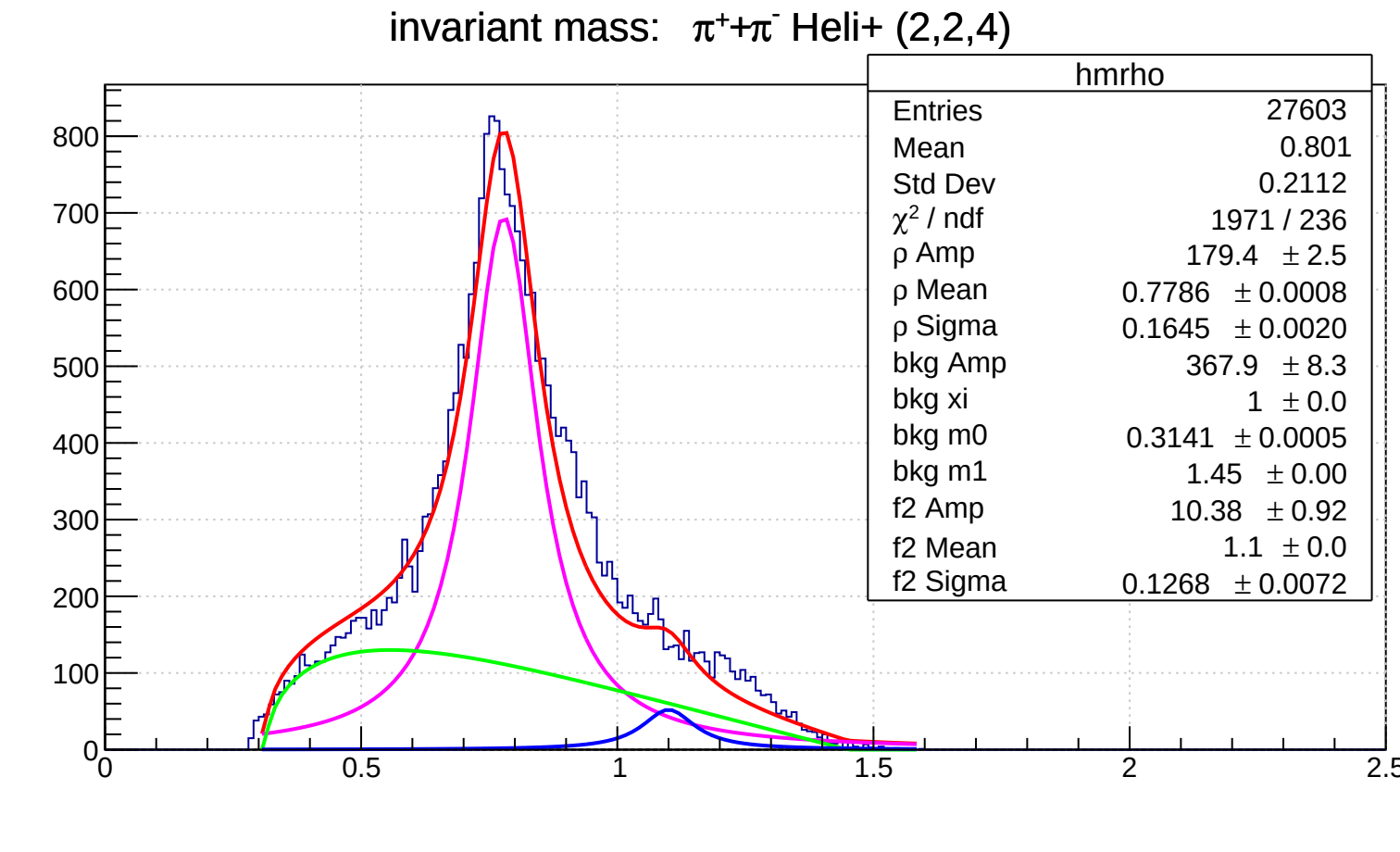

invariant mass: π⁺+π⁻ Heli+ (2,1,8)
hmrho
Entries 4748
Mean 0.723
Std Dev 0.1882
χ² / ndf 217.8 / 199
ρ Amp 30.92 ± 1.45
ρ Mean 0.7534 ± 0.0019
ρ Sigma 0.1545 ± 0.0059
bkg Amp 73.47 ± 5.08
bkg xi 1.01 ± 0.58
bkg m0 0.3018 ± 0.0023
bkg m1 1.258 ± 0.013
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
20
40
60
80
100
120
140
160
0
0.5
1
1.5
2
2.5

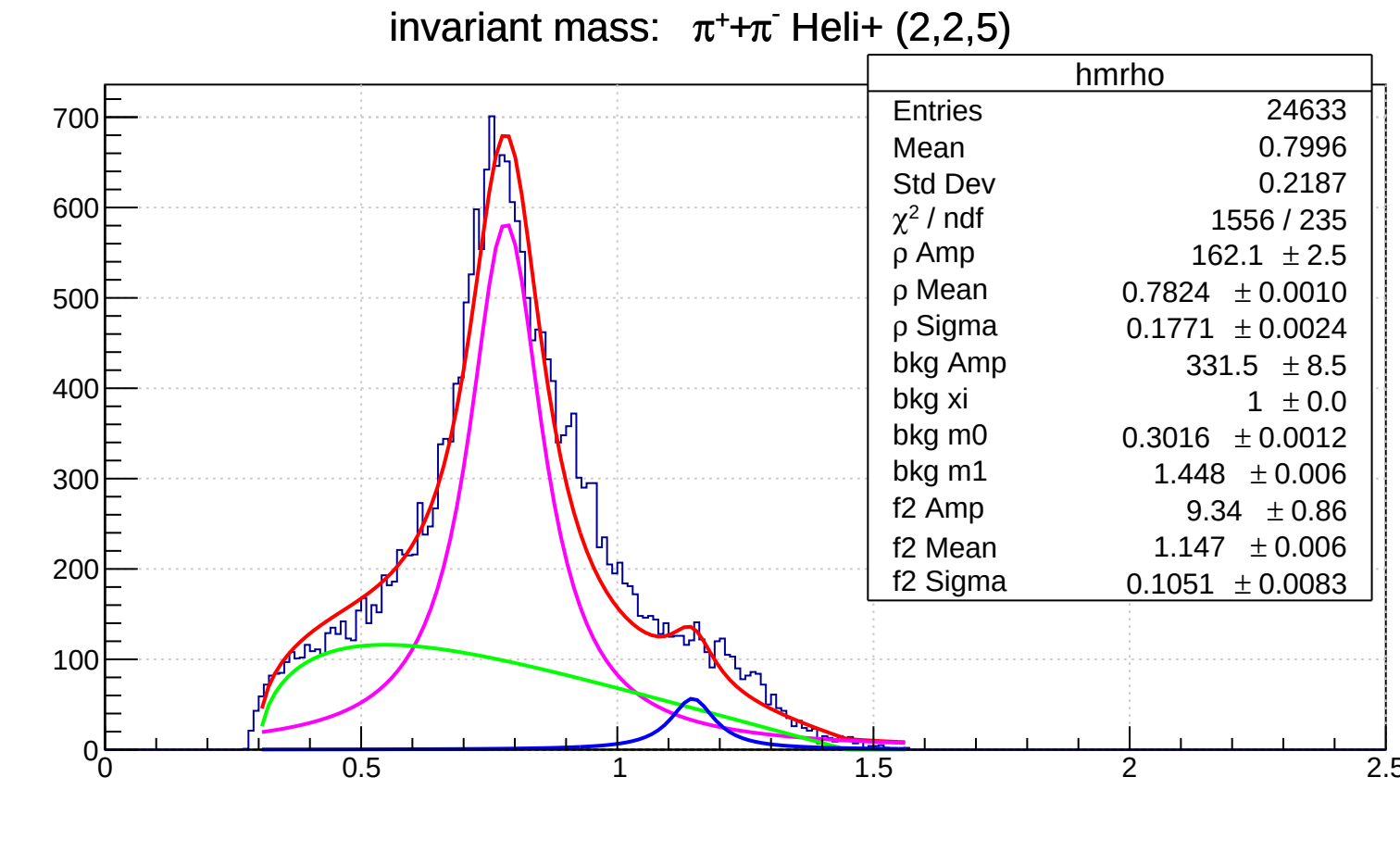

invariant mass: π⁺+π⁻ Heli+ (2,2,0)
hmrho
Entries 9502
Mean 0.8917
Std Dev 0.224
χ² / ndf 1350 / 238
ρ Amp 77.07 ± 1.34
ρ Mean 0.7944 ± 0.0022
ρ Sigma 0.2288 ± 0.0040
bkg Amp 0 ± 0.0
bkg xi 1 ± 0.0
bkg m0 0.3 ± 0.0
bkg m1 3 ± 0.0
f2 Amp 23.45 ± 1.02
f2 Mean 1.134 ± 0.005
f2 Sigma 0.1794 ± 0.0066
0
20
40
60
80
100
120
140
160
180
200
220
0
0.5
1
1.5
2
2.5

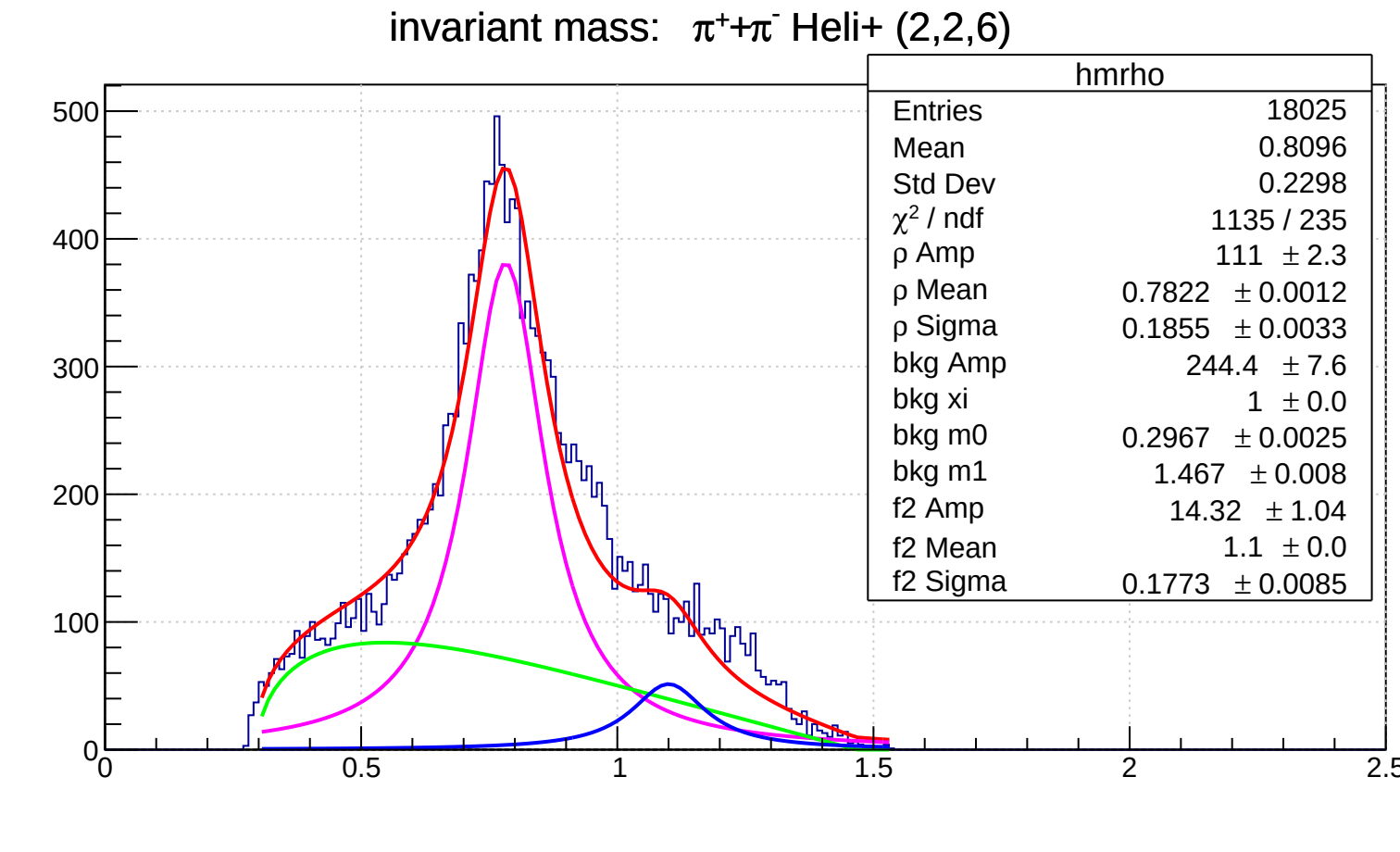

invariant mass: π+π- Heli+ (2,2,1)
hmrho
Entries 13521
Mean 0.8398
Std Dev 0.2283
χ2 / ndf 1158 / 237
ρ Amp 91.49 ± 2.17
ρ Mean 0.7826 ± 0.0015
ρ Sigma 0.193 ± 0.004
bkg Amp 112.6 ± 6.3
bkg xi 1 ± 0.0
bkg m0 0.3085 ± 0.0032
bkg m1 1.475 ± 0.001
f2 Amp 21.1 ± 1.0
f2 Mean 1.1 ± 0.0
f2 Sigma 0.1943 ± 0.0064
0
50
100
150
200
250
300
350
0
0.5
1
1.5
2
2.5

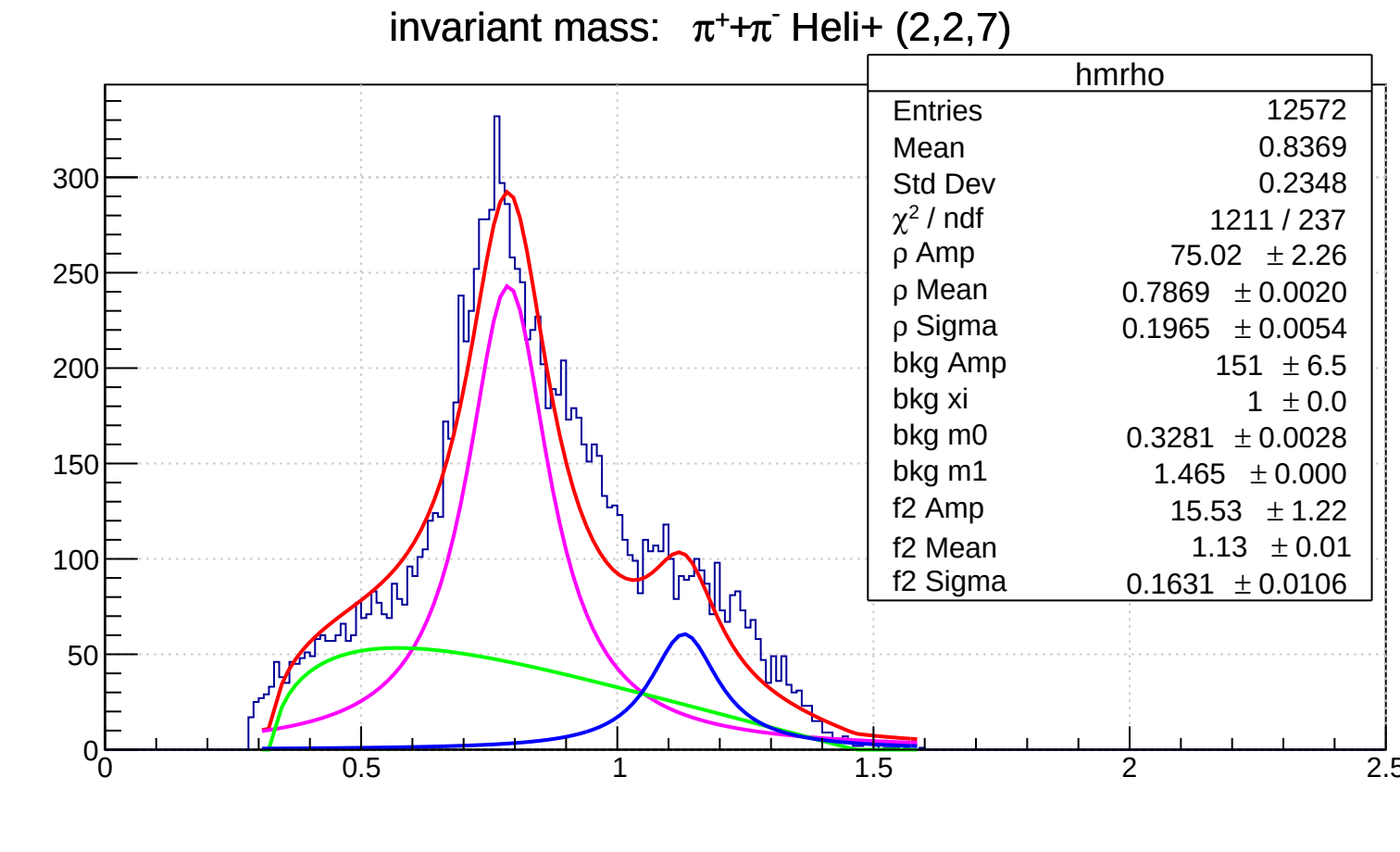

invariant mass: π+π- Heli+ (2,2,2)
hmrho
Entries 18902
Mean 0.8081
Std Dev 0.2201
χ2 / ndf 1504 / 240
ρ Amp 122.2 ± 2.3
ρ Mean 0.7853 ± 0.0013
ρ Sigma 0.1789 ± 0.0032
bkg Amp 243 ± 7.2
bkg xi 1 ± 0.0
bkg m0 0.3015 ± 0.0014
bkg m1 1.464 ± 0.007
f2 Amp 9.703 ± 0.969
f2 Mean 1.127 ± 0.013
f2 Sigma 0.126 ± 0.012
0
100
200
300
400
500
0
0.5
1
1.5
2
2.5

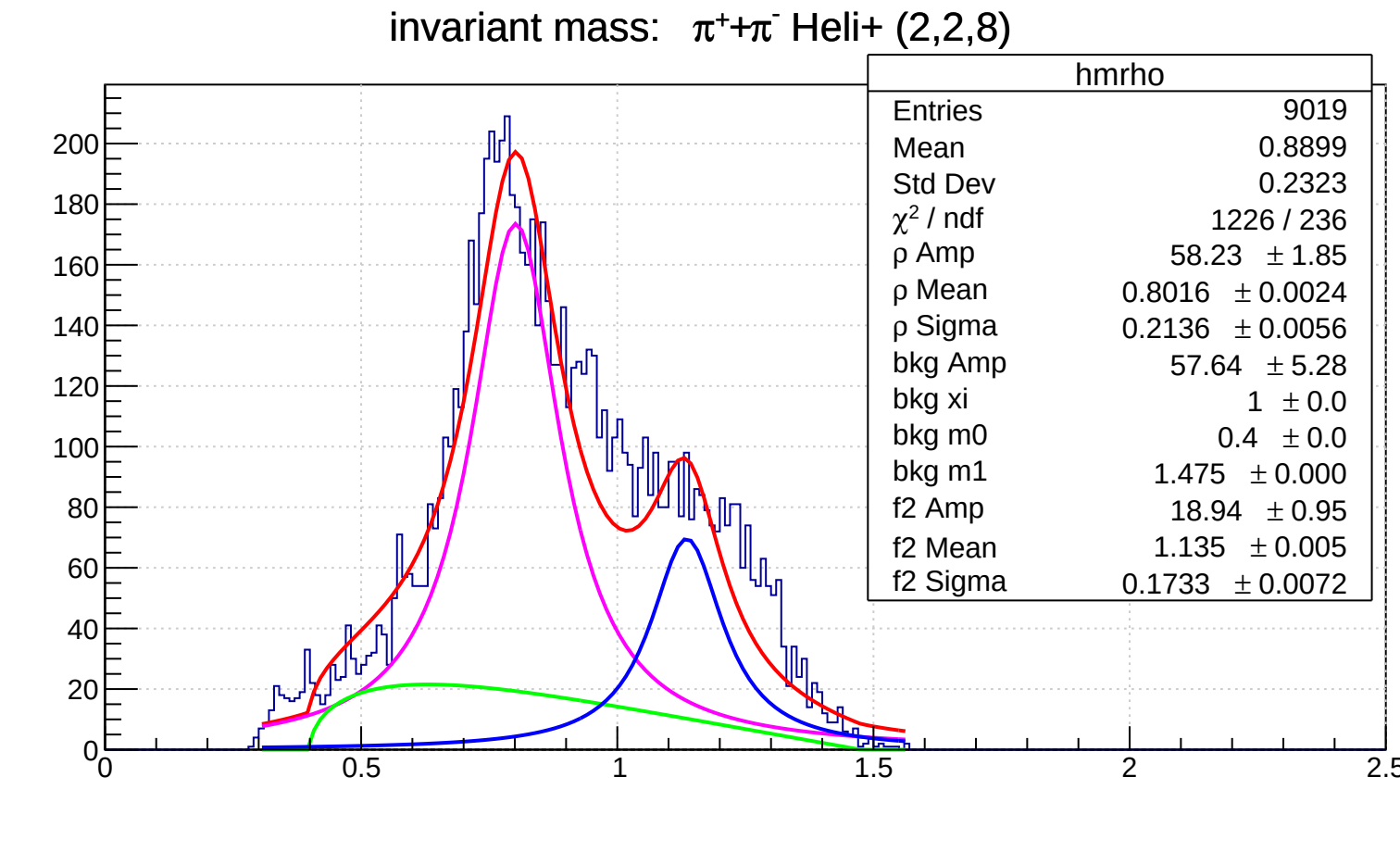

invariant mass: π⁺+π⁻ Heli+ (2,2,3)
hmrho
Entries 24852
Mean 0.8031
Std Dev 0.2126
χ² / ndf 1614 / 235
ρ Amp 160.8 ± 2.4
ρ Mean 0.7793 ± 0.0009
ρ Sigma 0.167 ± 0.002
bkg Amp 328.5 ± 8.2
bkg xi 1 ± 0.0
bkg m0 0.3219 ± 0.0011
bkg m1 1.455 ± 0.000
f2 Amp 10.96 ± 0.88
f2 Mean 1.1 ± 0.0
f2 Sigma 0.1354 ± 0.0073
800
700
600
500
400
300
200
100
0
0
0.5
1
1.5
2
2.5

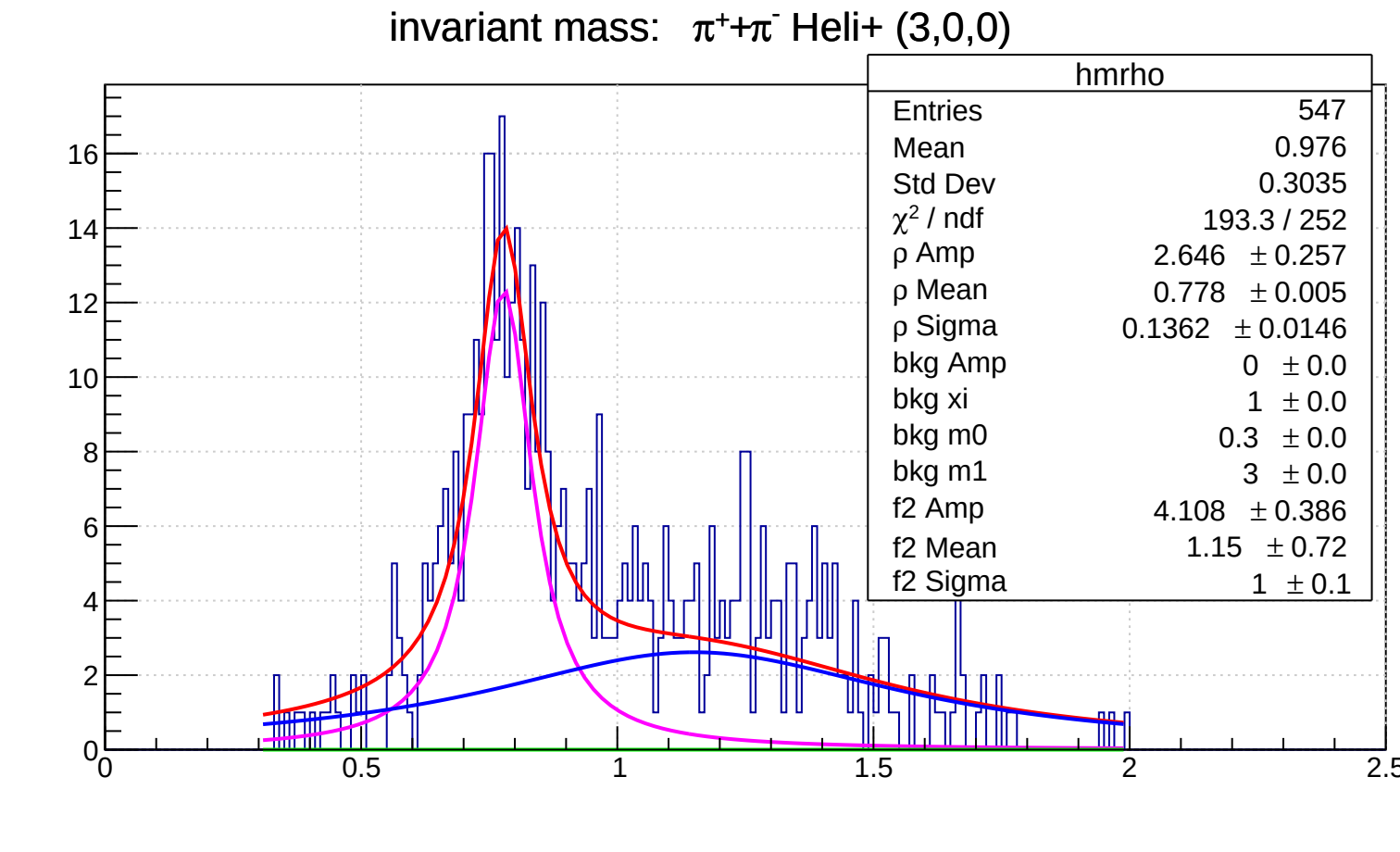

invariant mass: π⁺+π⁻ Heli+ (2,2,4)
hmrho
Entries 27603
Mean 0.801
Std Dev 0.2112
χ² / ndf 1971 / 236
ρ Amp 179.4 ± 2.5
ρ Mean 0.7786 ± 0.0008
ρ Sigma 0.1645 ± 0.0020
bkg Amp 367.9 ± 8.3
bkg xi 1 ± 0.0
bkg m0 0.3141 ± 0.0005
bkg m1 1.45 ± 0.00
f2 Amp 10.38 ± 0.92
f2 Mean 1.1 ± 0.0
f2 Sigma 0.1268 ± 0.0072
0
100
200
300
400
500
600
700
800
0
0.5
1
1.5
2
2.5

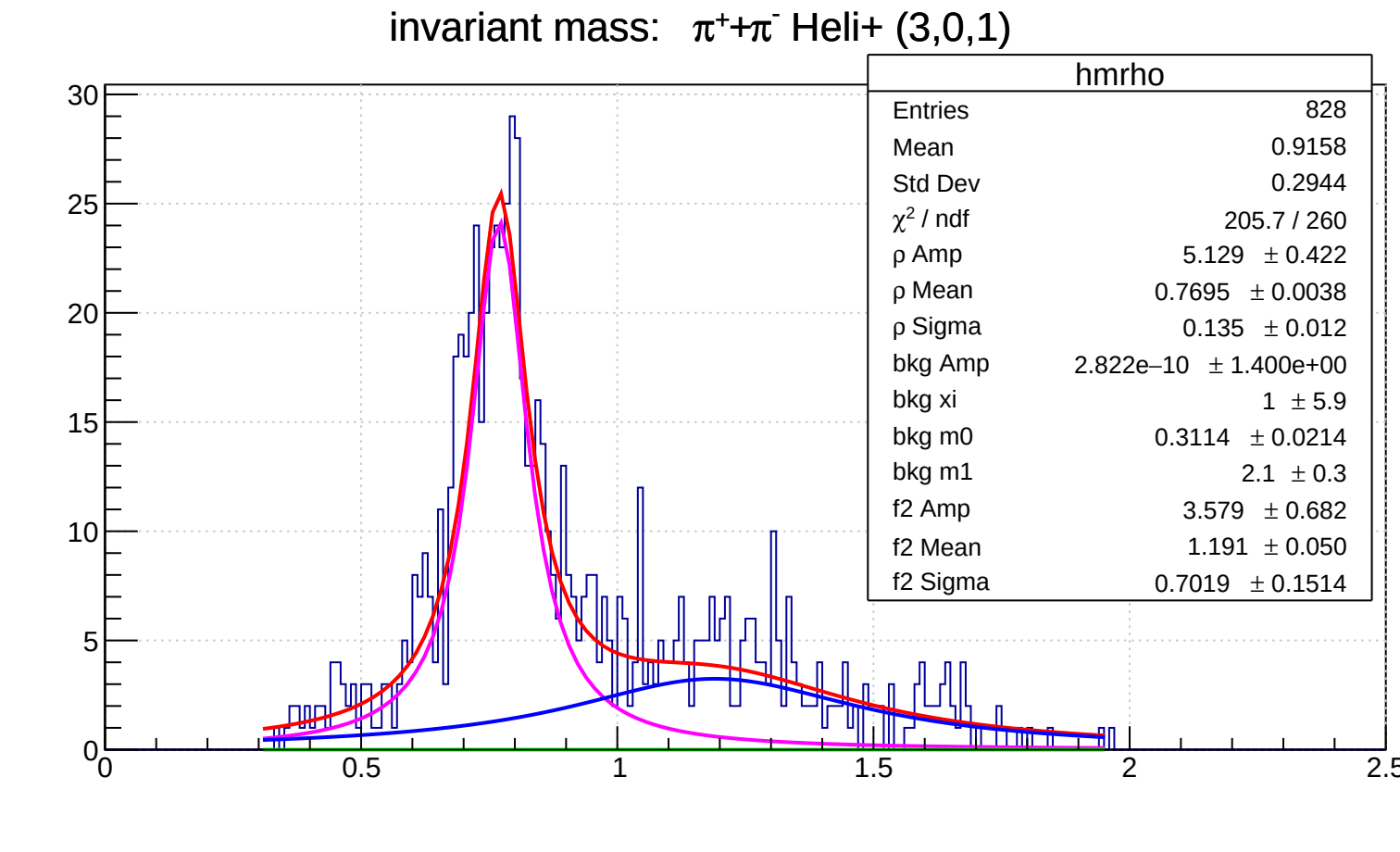

invariant mass: π⁺+π⁻ Heli+ (2,2,5)
hmrho
Entries 24633
Mean 0.7996
Std Dev 0.2187
χ² / ndf 1556 / 235
ρ Amp 162.1 ± 2.5
ρ Mean 0.7824 ± 0.0010
ρ Sigma 0.1771 ± 0.0024
bkg Amp 331.5 ± 8.5
bkg xi 1 ± 0.0
bkg m0 0.3016 ± 0.0012
bkg m1 1.448 ± 0.006
f2 Amp 9.34 ± 0.86
f2 Mean 1.147 ± 0.006
f2 Sigma 0.1051 ± 0.0083
0
100
200
300
400
500
600
700
0
0.5
1
1.5
2
2.5

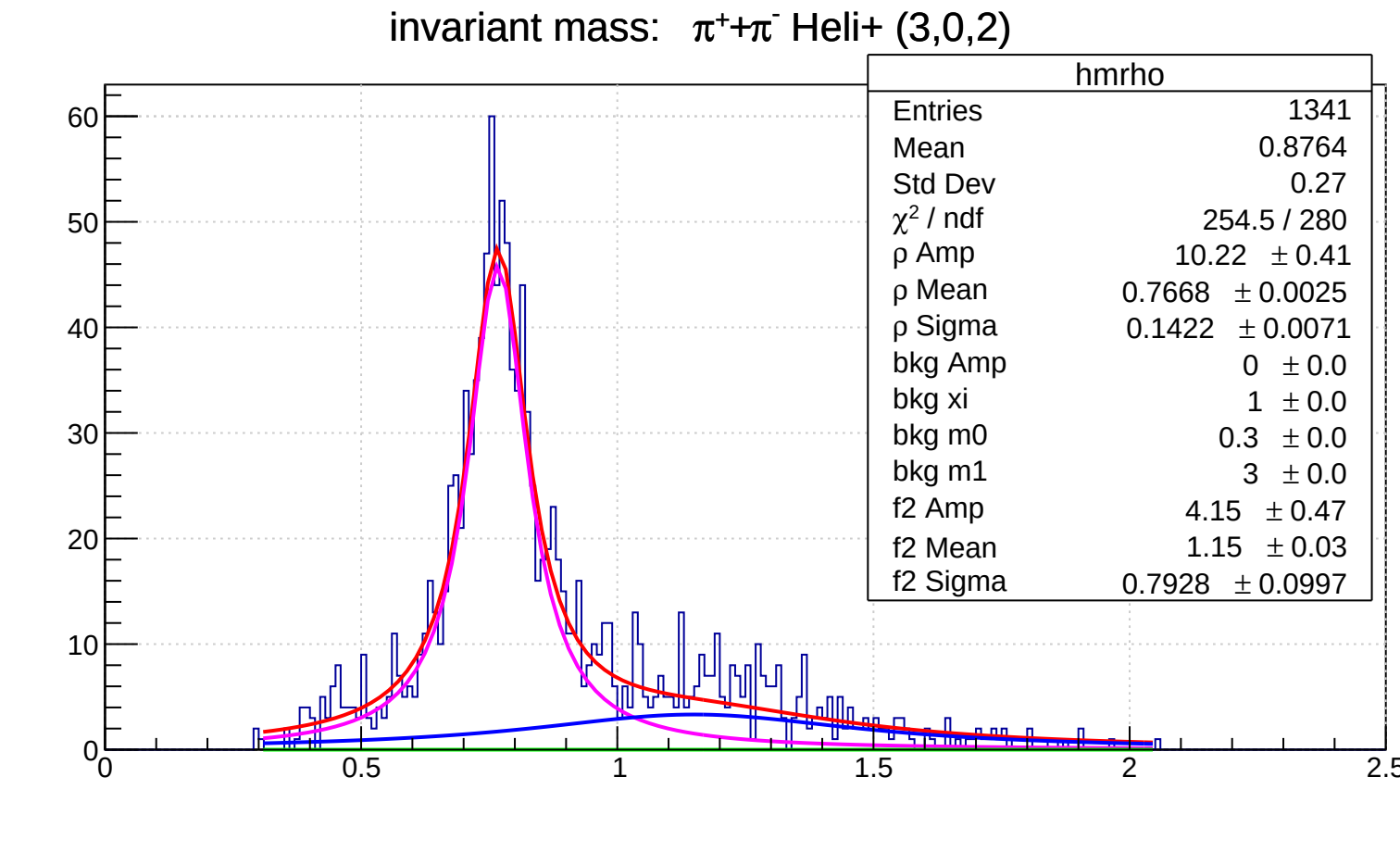

invariant mass: π⁺+π⁻ Heli+ (2,2,6)
hmrho
Entries 18025
Mean 0.8096
Std Dev 0.2298
χ² / ndf 1135 / 235
ρ Amp 111 ± 2.3
ρ Mean 0.7822 ± 0.0012
ρ Sigma 0.1855 ± 0.0033
bkg Amp 244.4 ± 7.6
bkg xi 1 ± 0.0
bkg m0 0.2967 ± 0.0025
bkg m1 1.467 ± 0.008
f2 Amp 14.32 ± 1.04
f2 Mean 1.1 ± 0.0
f2 Sigma 0.1773 ± 0.0085
500
400
300
200
100
0
0
0.5
1
1.5
2
2.5

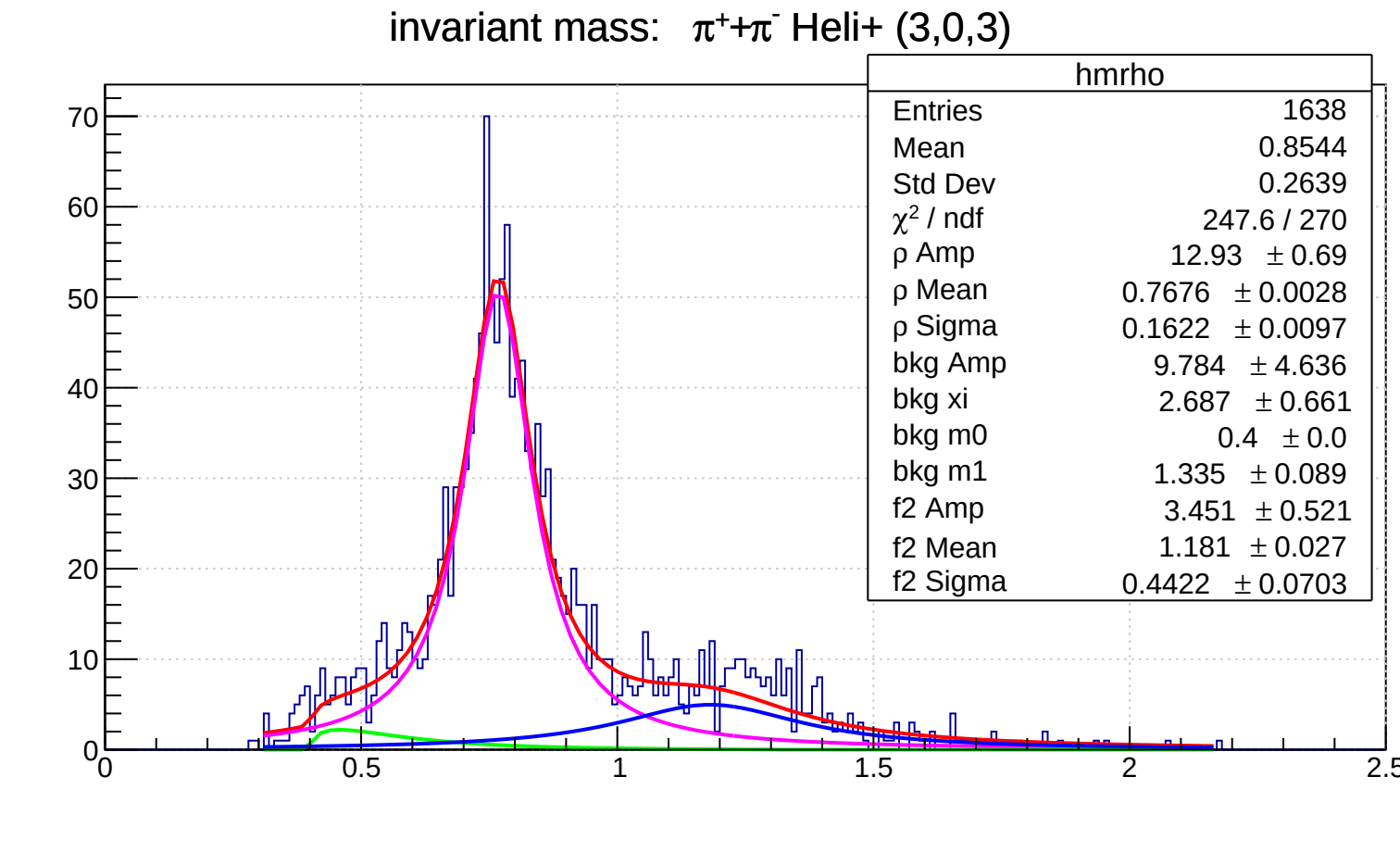

invariant mass: π⁺+π⁻ Heli+ (2,2,7)
hmrho
Entries 12572
Mean 0.8369
Std Dev 0.2348
χ² / ndf 1211 / 237
ρ Amp 75.02 ± 2.26
ρ Mean 0.7869 ± 0.0020
ρ Sigma 0.1965 ± 0.0054
bkg Amp 151 ± 6.5
bkg xi 1 ± 0.0
bkg m0 0.3281 ± 0.0028
bkg m1 1.465 ± 0.000
f2 Amp 15.53 ± 1.22
f2 Mean 1.13 ± 0.01
f2 Sigma 0.1631 ± 0.0106
0
50
100
150
200
250
300
0
0.5
1
1.5
2
2.5

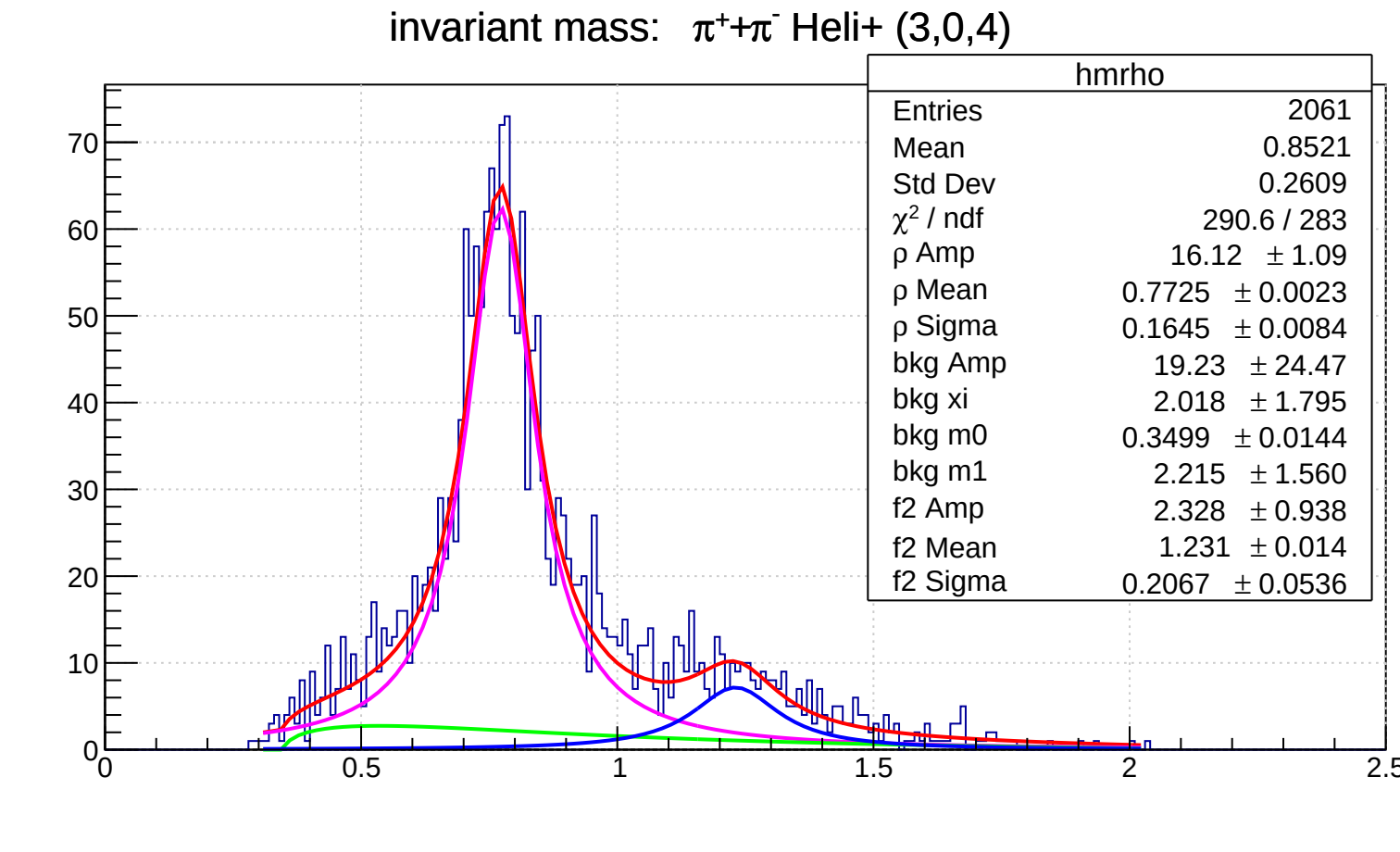

invariant mass: π⁺+π⁻ Heli+ (2,2,8)
hmrho
Entries 9019
Mean 0.8899
Std Dev 0.2323
χ² / ndf 1226 / 236
ρ Amp 58.23 ± 1.85
ρ Mean 0.8016 ± 0.0024
ρ Sigma 0.2136 ± 0.0056
bkg Amp 57.64 ± 5.28
bkg xi 1 ± 0.0
bkg m0 0.4 ± 0.0
bkg m1 1.475 ± 0.000
f2 Amp 18.94 ± 0.95
f2 Mean 1.135 ± 0.005
f2 Sigma 0.1733 ± 0.0072
0
20
40
60
80
100
120
140
160
180
200
0
0.5
1
1.5
2
2.5

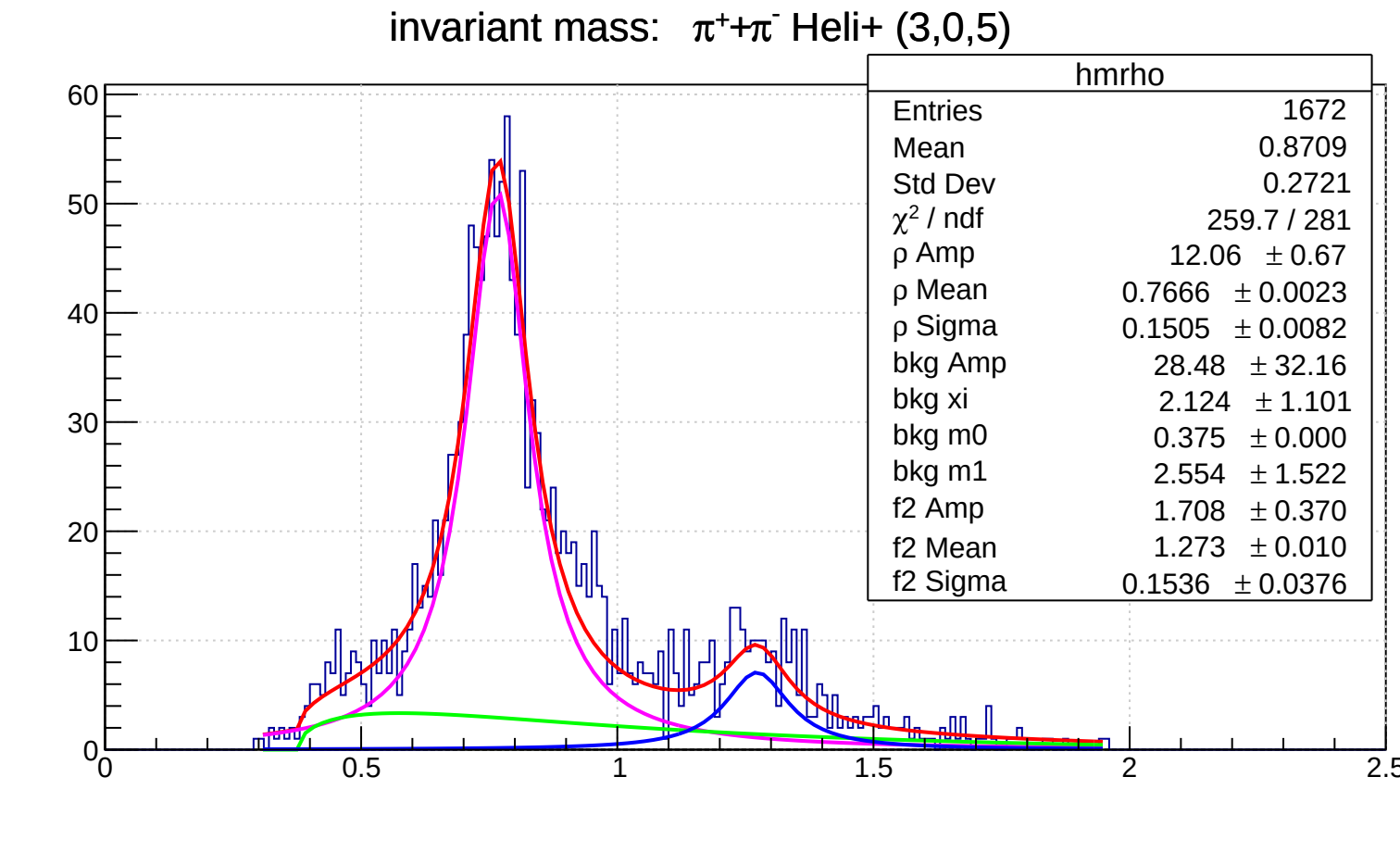

invariant mass: π+π- Heli+ (3,0,0)
hmrho
Entries 547
Mean 0.976
Std Dev 0.3035
χ2 / ndf 193.3 / 252
ρ Amp 2.646 ± 0.257
ρ Mean 0.778 ± 0.005
ρ Sigma 0.1362 ± 0.0146
bkg Amp 0 ± 0.0
bkg xi 1 ± 0.0
bkg m0 0.3 ± 0.0
bkg m1 3 ± 0.0
f2 Amp 4.108 ± 0.386
f2 Mean 1.15 ± 0.72
f2 Sigma 1 ± 0.1
0
2
4
6
8
10
12
14
16
0
0.5
1
1.5
2
2.5

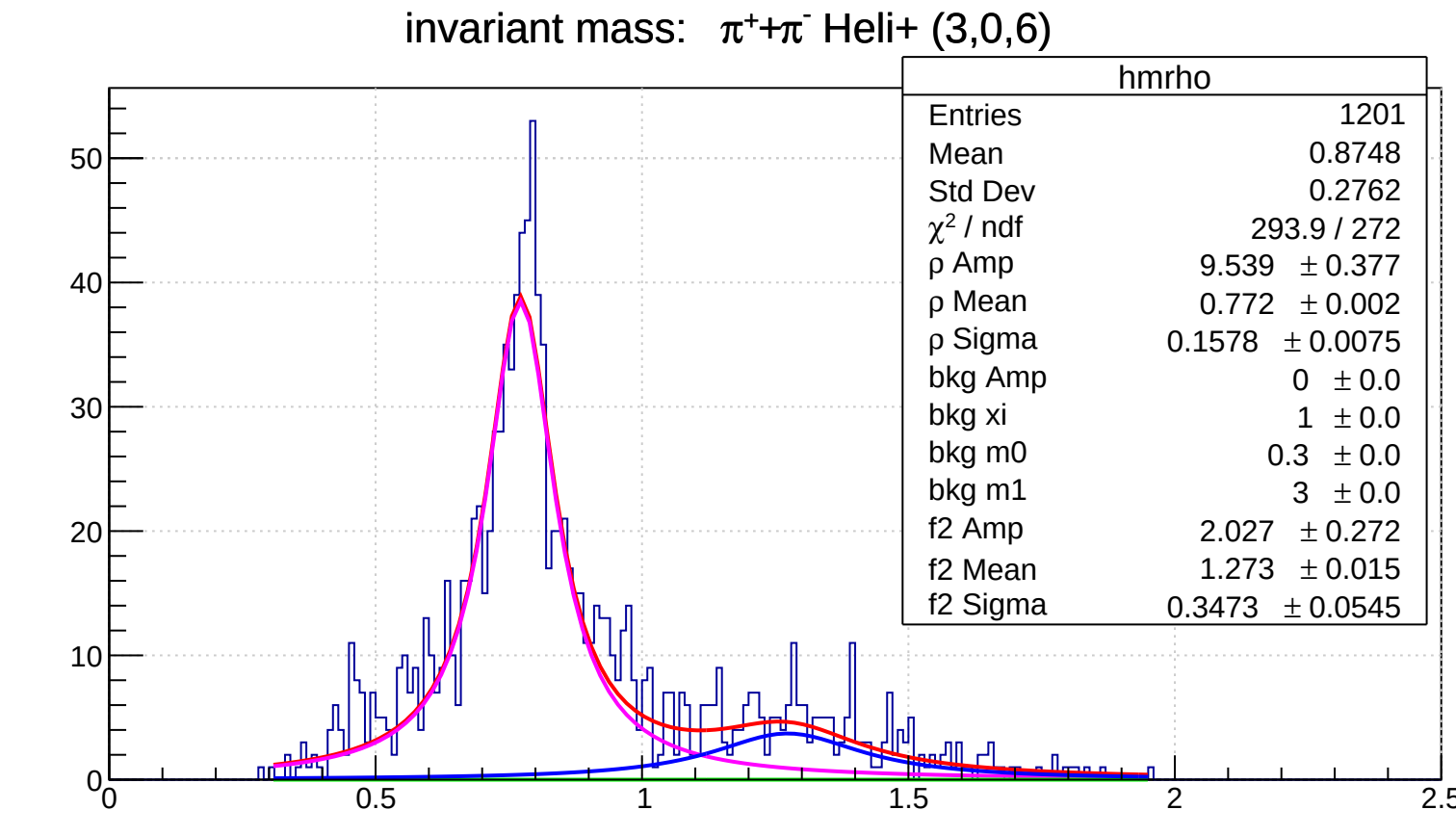

invariant mass: π⁺+π⁻ Heli+ (3,0,1)
hmrho
Entries 828
Mean 0.9158
Std Dev 0.2944
χ² / ndf 205.7 / 260
ρ Amp 5.129 ± 0.422
ρ Mean 0.7695 ± 0.0038
ρ Sigma 0.135 ± 0.012
bkg Amp 2.822e−10 ± 1.400e+00
bkg xi 1 ± 5.9
bkg m0 0.3114 ± 0.0214
bkg m1 2.1 ± 0.3
f2 Amp 3.579 ± 0.682
f2 Mean 1.191 ± 0.050
f2 Sigma 0.7019 ± 0.1514
0
5
10
15
20
25
30
0
0.5
1
1.5
2
2.5

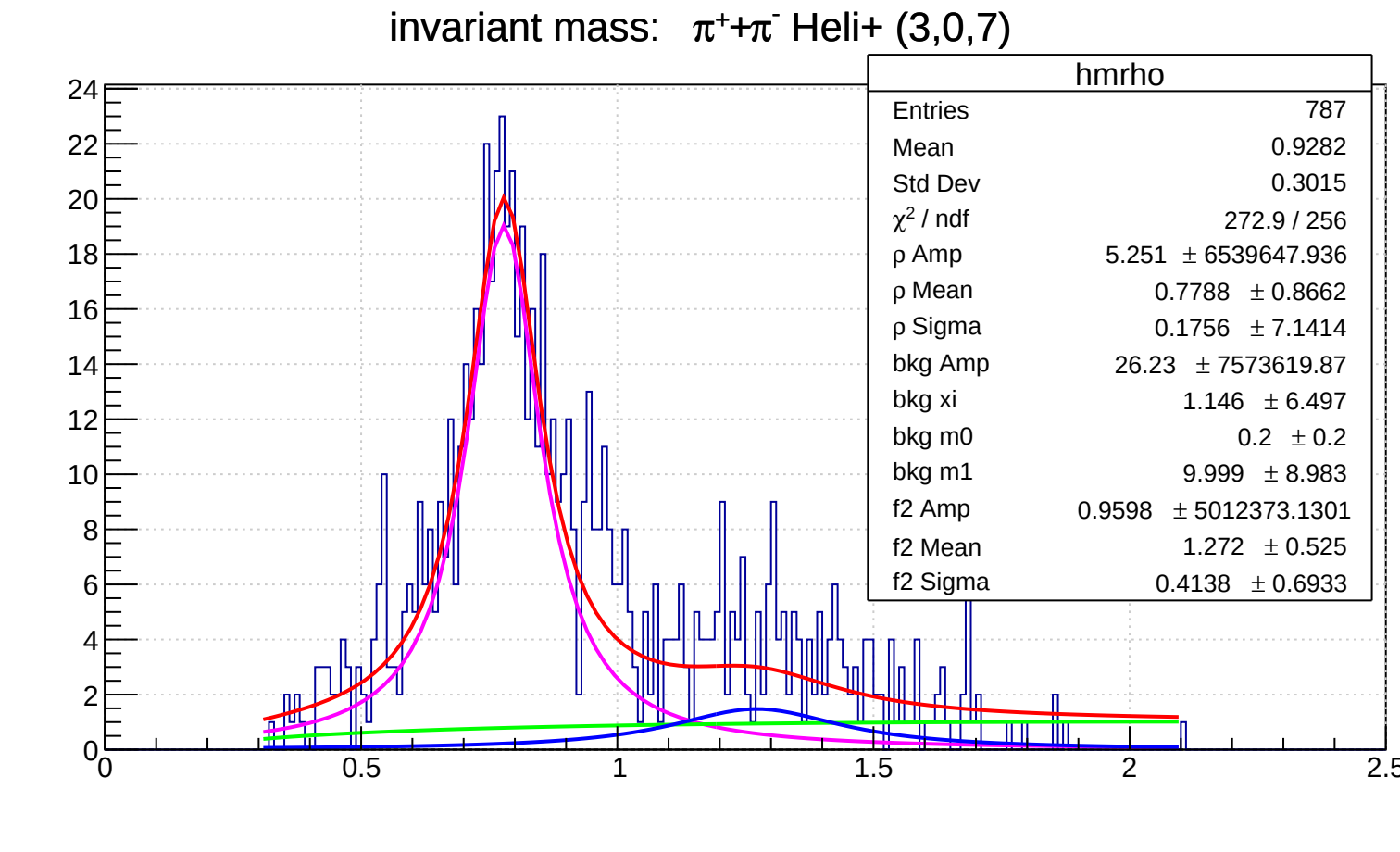

invariant mass: π⁺+π⁻ Heli+ (3,0,2)
hmrho
Entries 1341
Mean 0.8764
Std Dev 0.27
χ² / ndf 254.5 / 280
ρ Amp 10.22 ± 0.41
ρ Mean 0.7668 ± 0.0025
ρ Sigma 0.1422 ± 0.0071
bkg Amp 0 ± 0.0
bkg xi 1 ± 0.0
bkg m0 0.3 ± 0.0
bkg m1 3 ± 0.0
f2 Amp 4.15 ± 0.47
f2 Mean 1.15 ± 0.03
f2 Sigma 0.7928 ± 0.0997
0
10
20
30
40
50
60
0
0.5
1
1.5
2
2.5

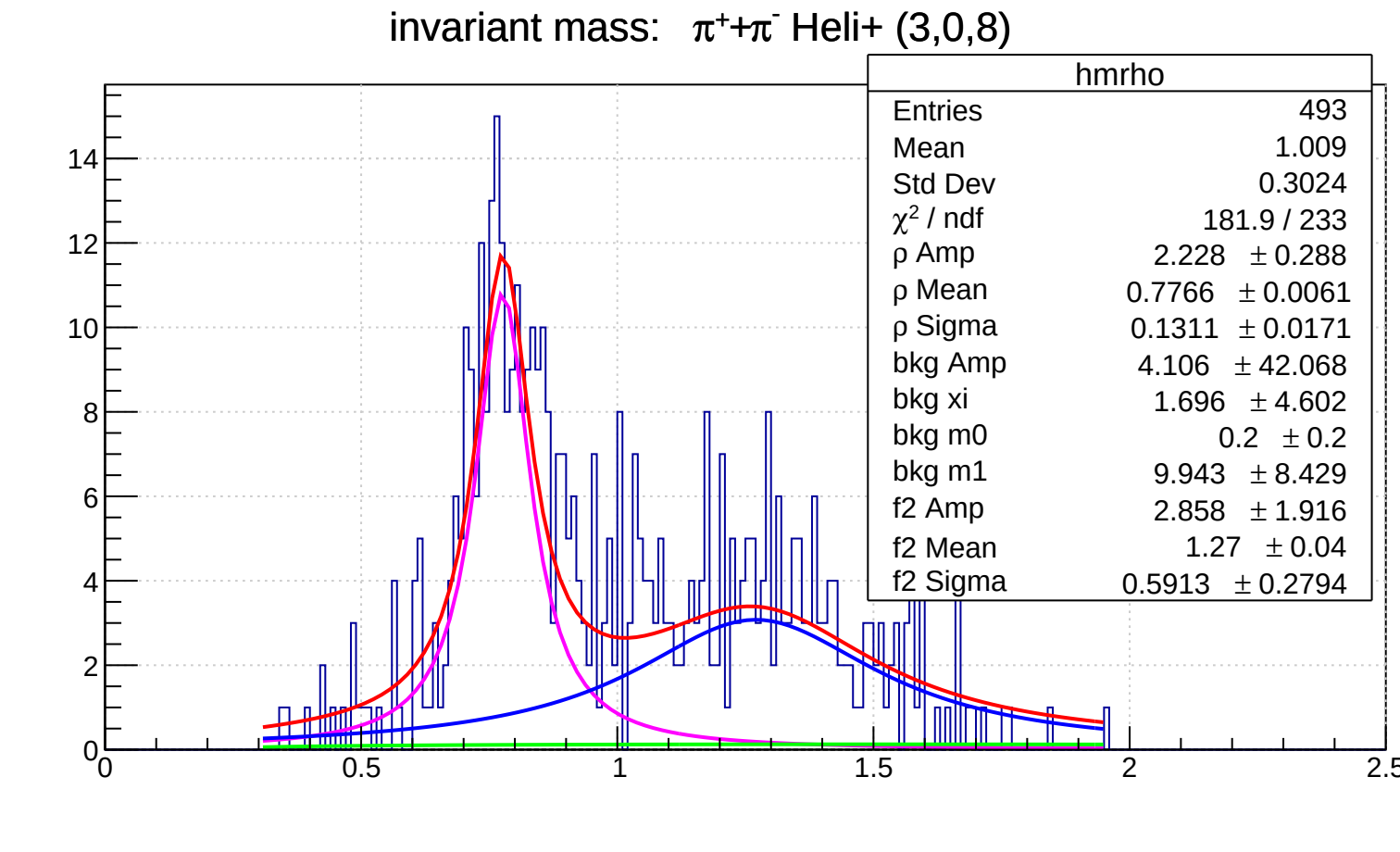

invariant mass: π⁺+π⁻ Heli+ (3,0,3)
hmrho
Entries 1638
Mean 0.8544
Std Dev 0.2639
χ² / ndf 247.6 / 270
ρ Amp 12.93 ± 0.69
ρ Mean 0.7676 ± 0.0028
ρ Sigma 0.1622 ± 0.0097
bkg Amp 9.784 ± 4.636
bkg xi 2.687 ± 0.661
bkg m0 0.4 ± 0.0
bkg m1 1.335 ± 0.089
f2 Amp 3.451 ± 0.521
f2 Mean 1.181 ± 0.027
f2 Sigma 0.4422 ± 0.0703
0
10
20
30
40
50
60
70
0
0.5
1
1.5
2
2.5

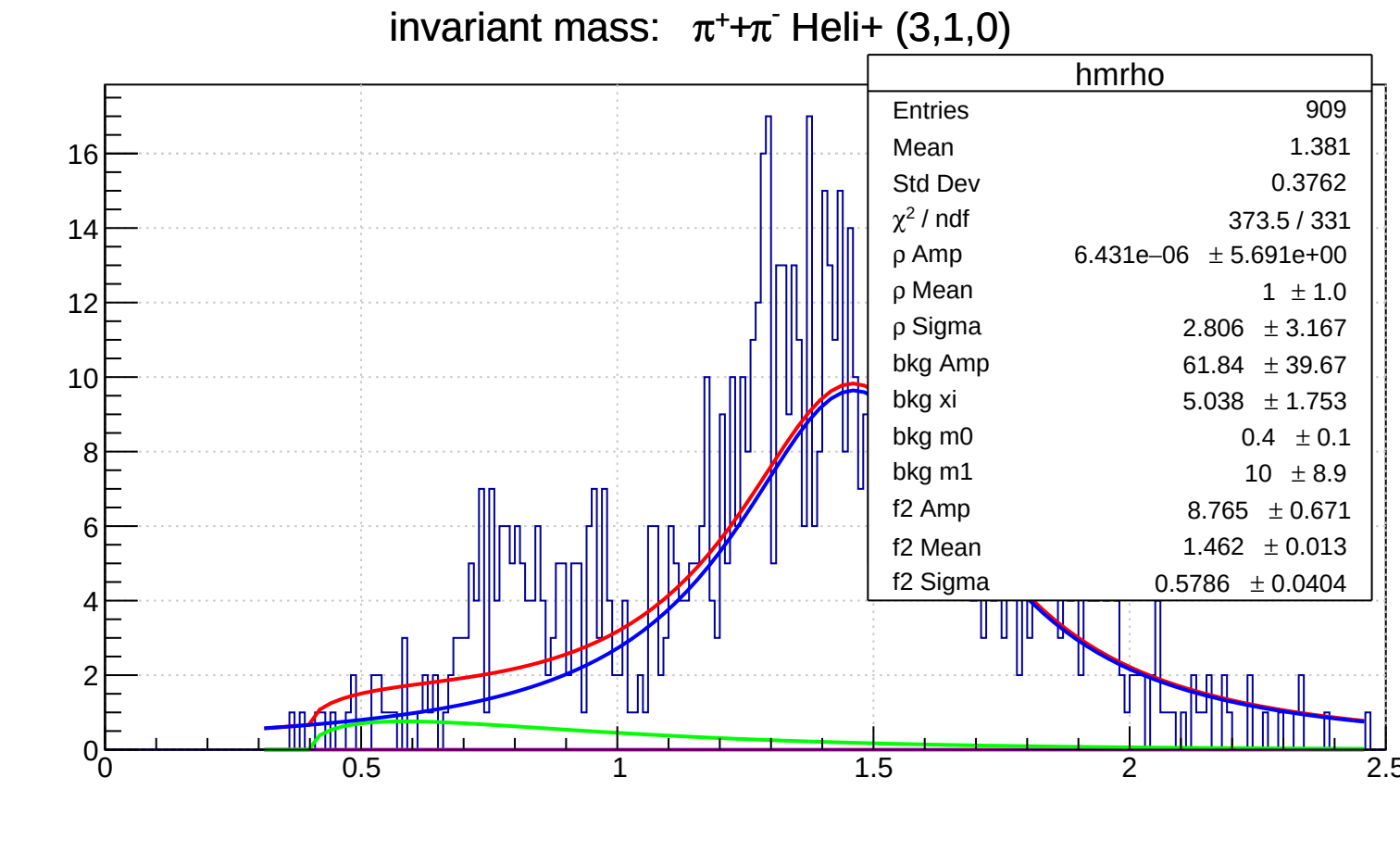

invariant mass: π⁺+π⁻ Heli+ (3,0,4)
hmrho
Entries 2061
Mean 0.8521
Std Dev 0.2609
χ² / ndf 290.6 / 283
ρ Amp 16.12 ± 1.09
ρ Mean 0.7725 ± 0.0023
ρ Sigma 0.1645 ± 0.0084
bkg Amp 19.23 ± 24.47
bkg xi 2.018 ± 1.795
bkg m0 0.3499 ± 0.0144
bkg m1 2.215 ± 1.560
f2 Amp 2.328 ± 0.938
f2 Mean 1.231 ± 0.014
f2 Sigma 0.2067 ± 0.0536
0
10
20
30
40
50
60
70
0
0.5
1
1.5
2
2.5

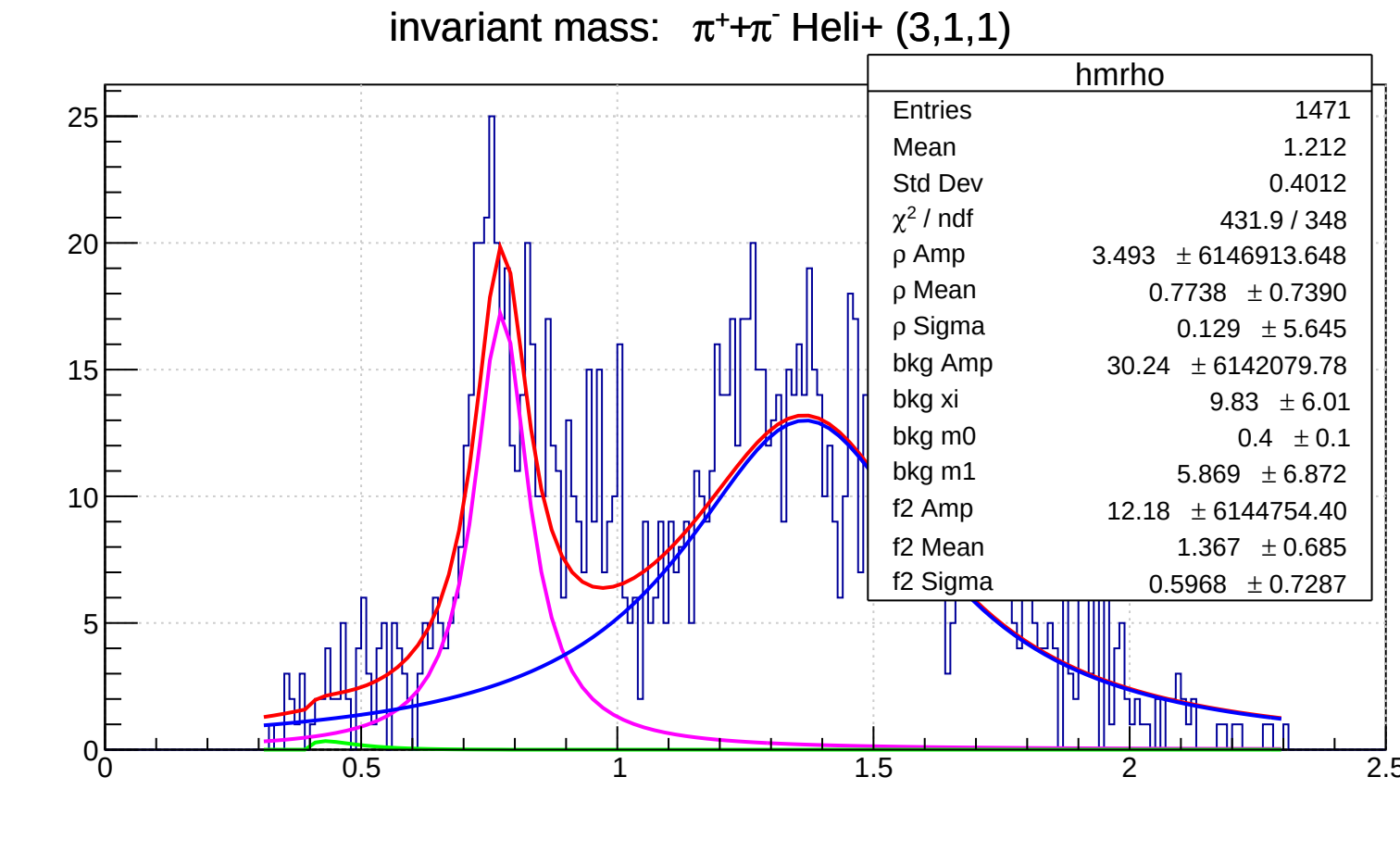

invariant mass: π⁺+π⁻ Heli+ (3,0,5)
hmrho
Entries 1672
Mean 0.8709
Std Dev 0.2721
χ² / ndf 259.7 / 281
ρ Amp 12.06 ± 0.67
ρ Mean 0.7666 ± 0.0023
ρ Sigma 0.1505 ± 0.0082
bkg Amp 28.48 ± 32.16
bkg xi 2.124 ± 1.101
bkg m0 0.375 ± 0.000
bkg m1 2.554 ± 1.522
f2 Amp 1.708 ± 0.370
f2 Mean 1.273 ± 0.010
f2 Sigma 0.1536 ± 0.0376
0
10
20
30
40
50
60
0
0.5
1
1.5
2
2.5

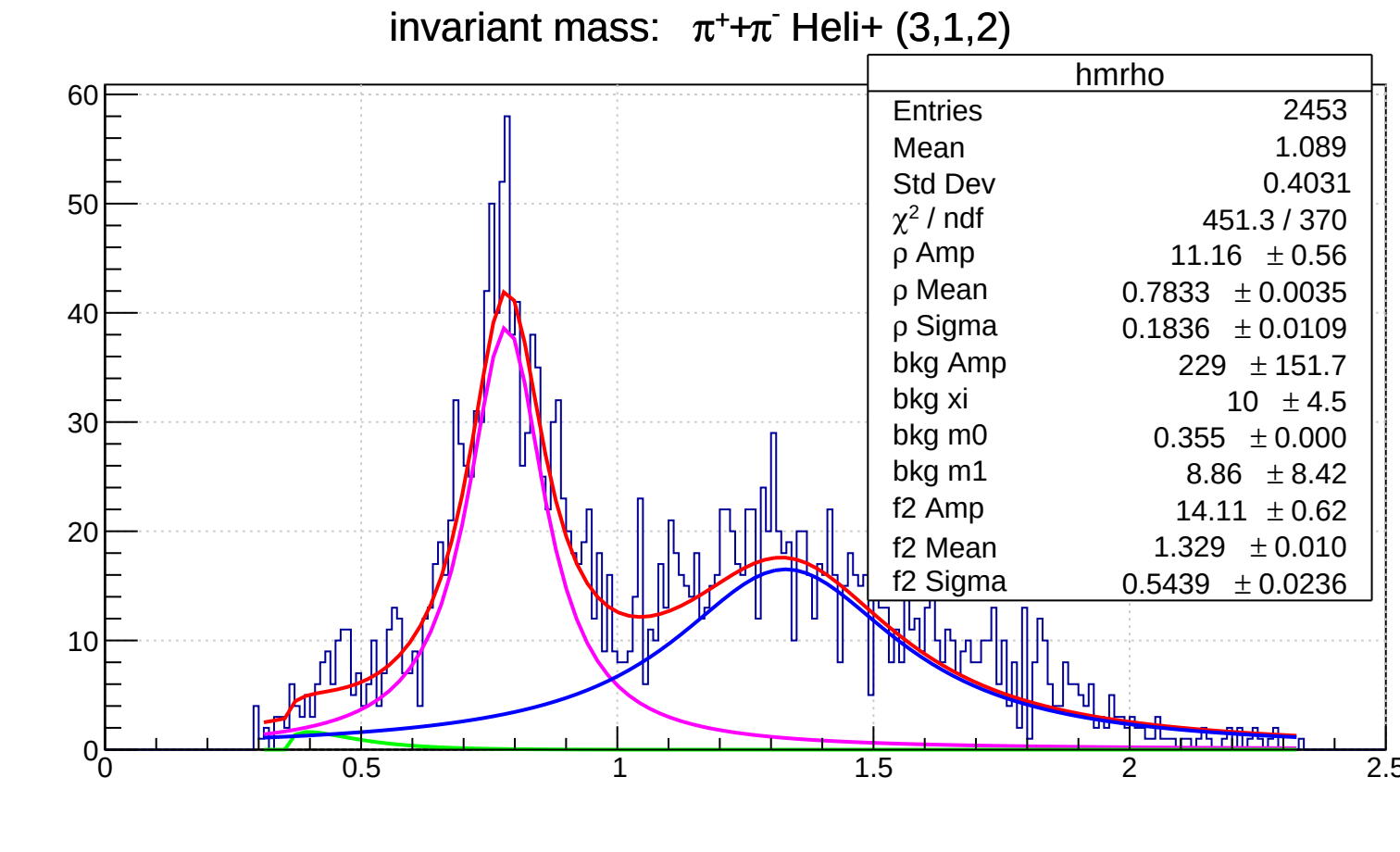

invariant mass: π+π- Heli+ (3,0,6)
hmrho
Entries 1201
Mean 0.8748
Std Dev 0.2762
χ2 / ndf 293.9 / 272
ρ Amp 9.539 ± 0.377
ρ Mean 0.772 ± 0.002
ρ Sigma 0.1578 ± 0.0075
bkg Amp 0 ± 0.0
bkg xi 1 ± 0.0
bkg m0 0.3 ± 0.0
bkg m1 3 ± 0.0
f2 Amp 2.027 ± 0.272
f2 Mean 1.273 ± 0.015
f2 Sigma 0.3473 ± 0.0545
0
10
20
30
40
50
0
0.5
1
1.5
2
2.5

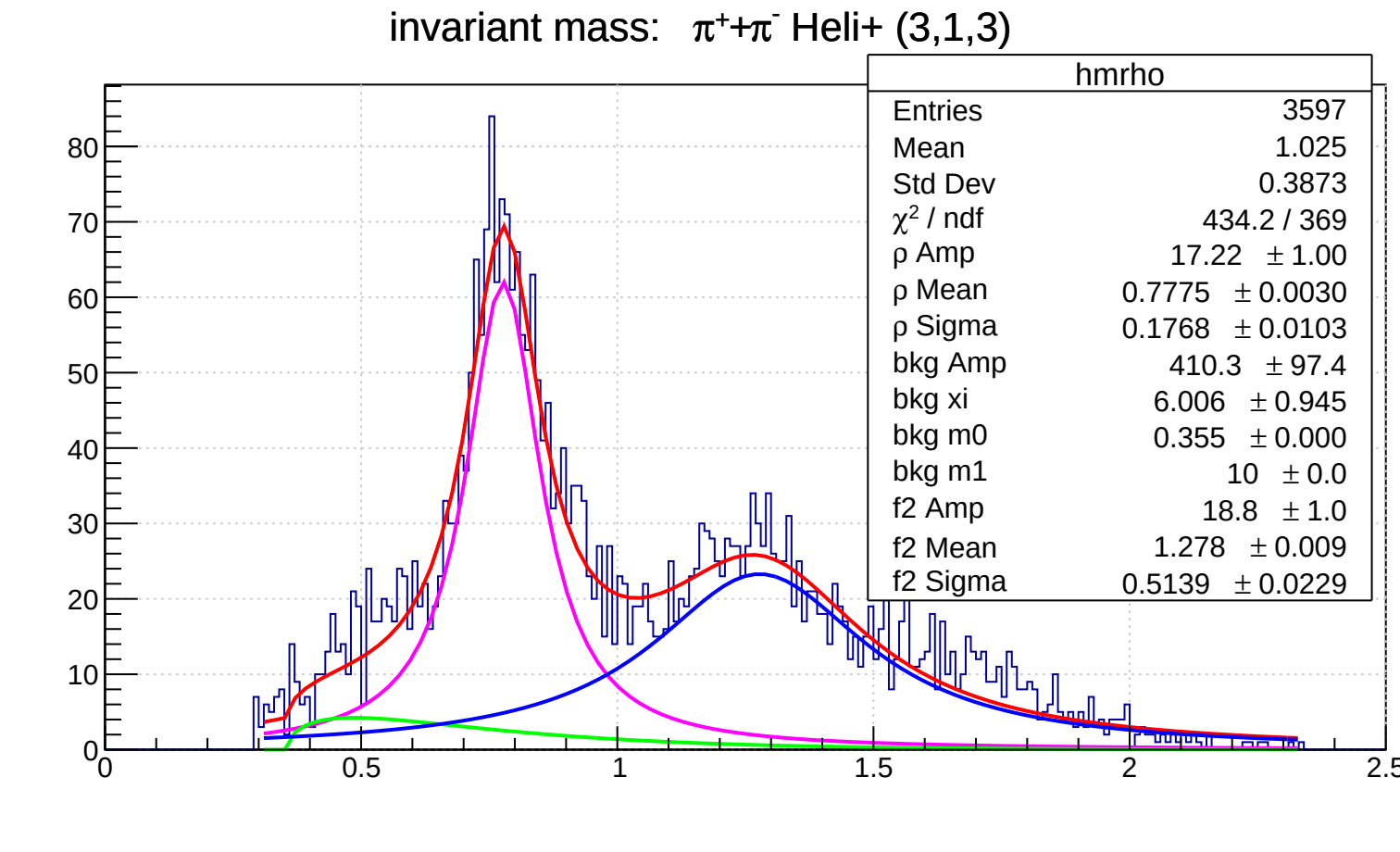

invariant mass: π⁺+π⁻ Heli+ (3,0,7)
hmrho
Entries 787
Mean 0.9282
Std Dev 0.3015
χ² / ndf 272.9 / 256
ρ Amp 5.251 ± 6539647.936
ρ Mean 0.7788 ± 0.8662
ρ Sigma 0.1756 ± 7.1414
bkg Amp 26.23 ± 7573619.87
bkg xi 1.146 ± 6.497
bkg m0 0.2 ± 0.2
bkg m1 9.999 ± 8.983
f2 Amp 0.9598 ± 5012373.1301
f2 Mean 1.272 ± 0.525
f2 Sigma 0.4138 ± 0.6933
0
2
4
6
8
10
12
14
16
18
20
22
24
0
0.5
1
1.5
2
2.5

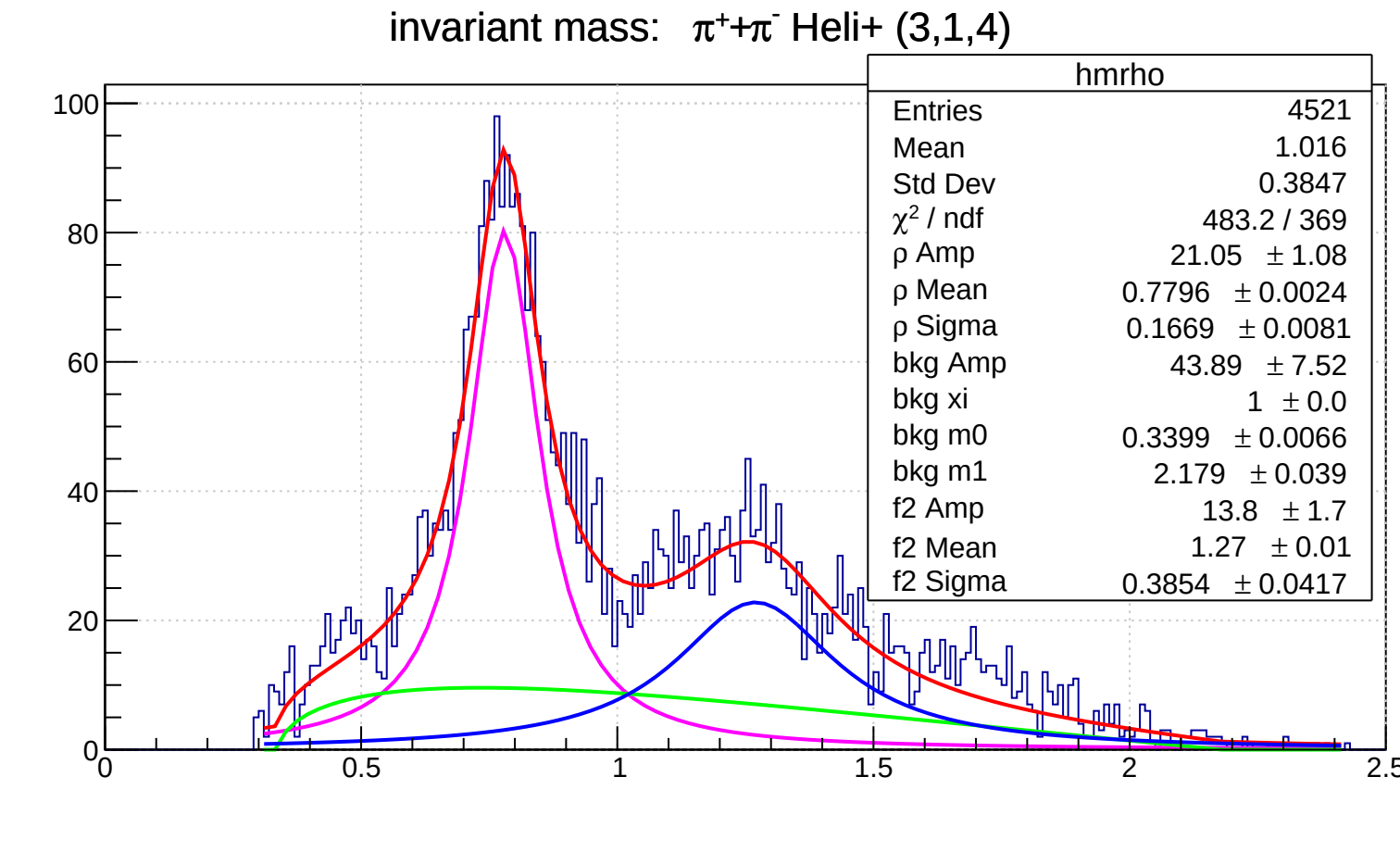

invariant mass: π⁺+π⁻ Heli+ (3,0,8)
hmrho
Entries 493
Mean 1.009
Std Dev 0.3024
χ² / ndf 181.9 / 233
ρ Amp 2.228 ± 0.288
ρ Mean 0.7766 ± 0.0061
ρ Sigma 0.1311 ± 0.0171
bkg Amp 4.106 ± 42.068
bkg xi 1.696 ± 4.602
bkg m0 0.2 ± 0.2
bkg m1 9.943 ± 8.429
f2 Amp 2.858 ± 1.916
f2 Mean 1.27 ± 0.04
f2 Sigma 0.5913 ± 0.2794
0
2
4
6
8
10
12
14
0
0.5
1
1.5
2
2.5

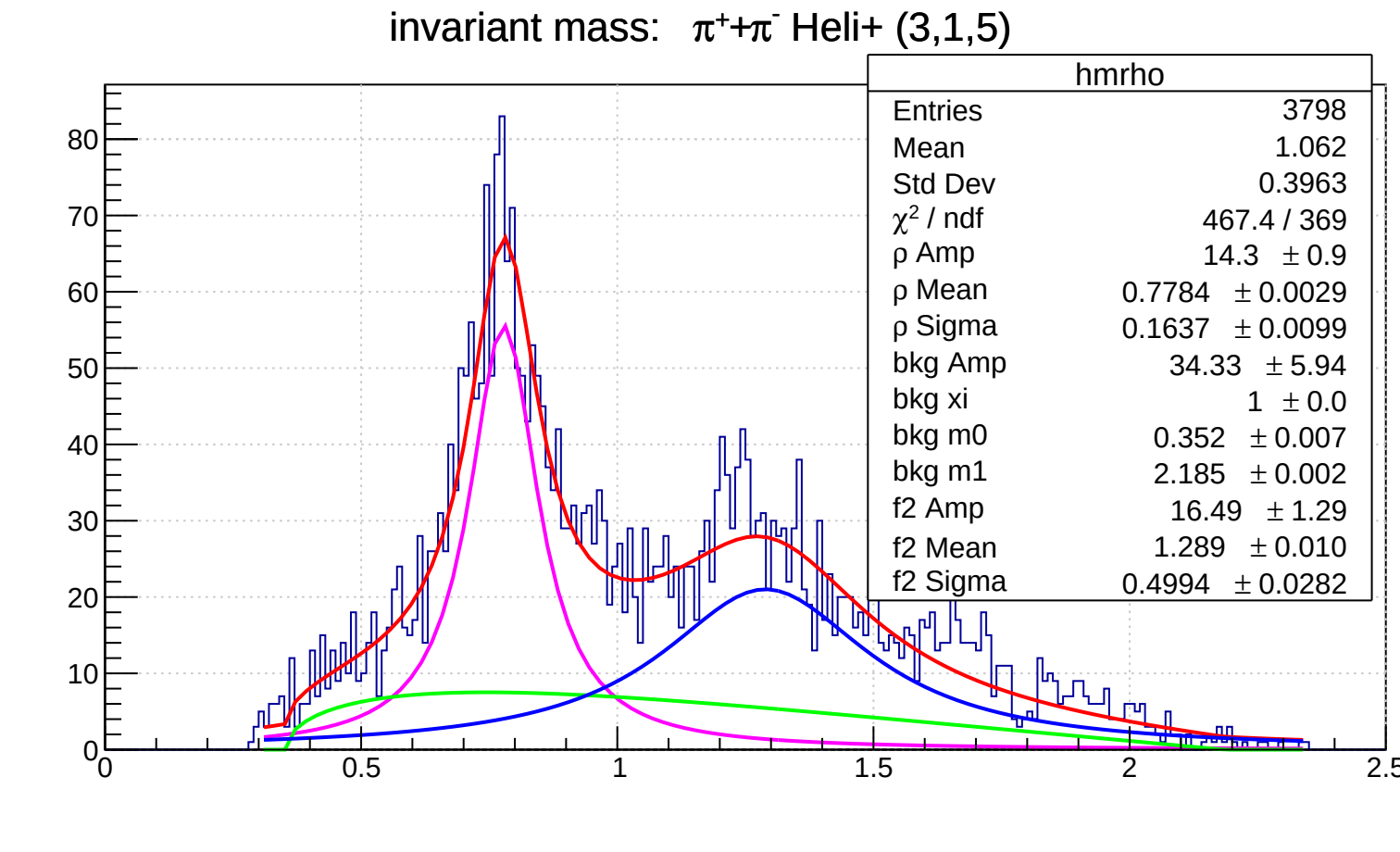

invariant mass: π⁺+π⁻ Heli+ (3,1,0)
hmrho
Entries 909
Mean 1.381
Std Dev 0.3762
χ² / ndf 373.5 / 331
ρ Amp 6.431e−06 ± 5.691e+00
ρ Mean 1 ± 1.0
ρ Sigma 2.806 ± 3.167
bkg Amp 61.84 ± 39.67
bkg xi 5.038 ± 1.753
bkg m0 0.4 ± 0.1
bkg m1 10 ± 8.9
f2 Amp 8.765 ± 0.671
f2 Mean 1.462 ± 0.013
f2 Sigma 0.5786 ± 0.0404
0
2
4
6
8
10
12
14
16
0
0.5
1
1.5
2
2.5

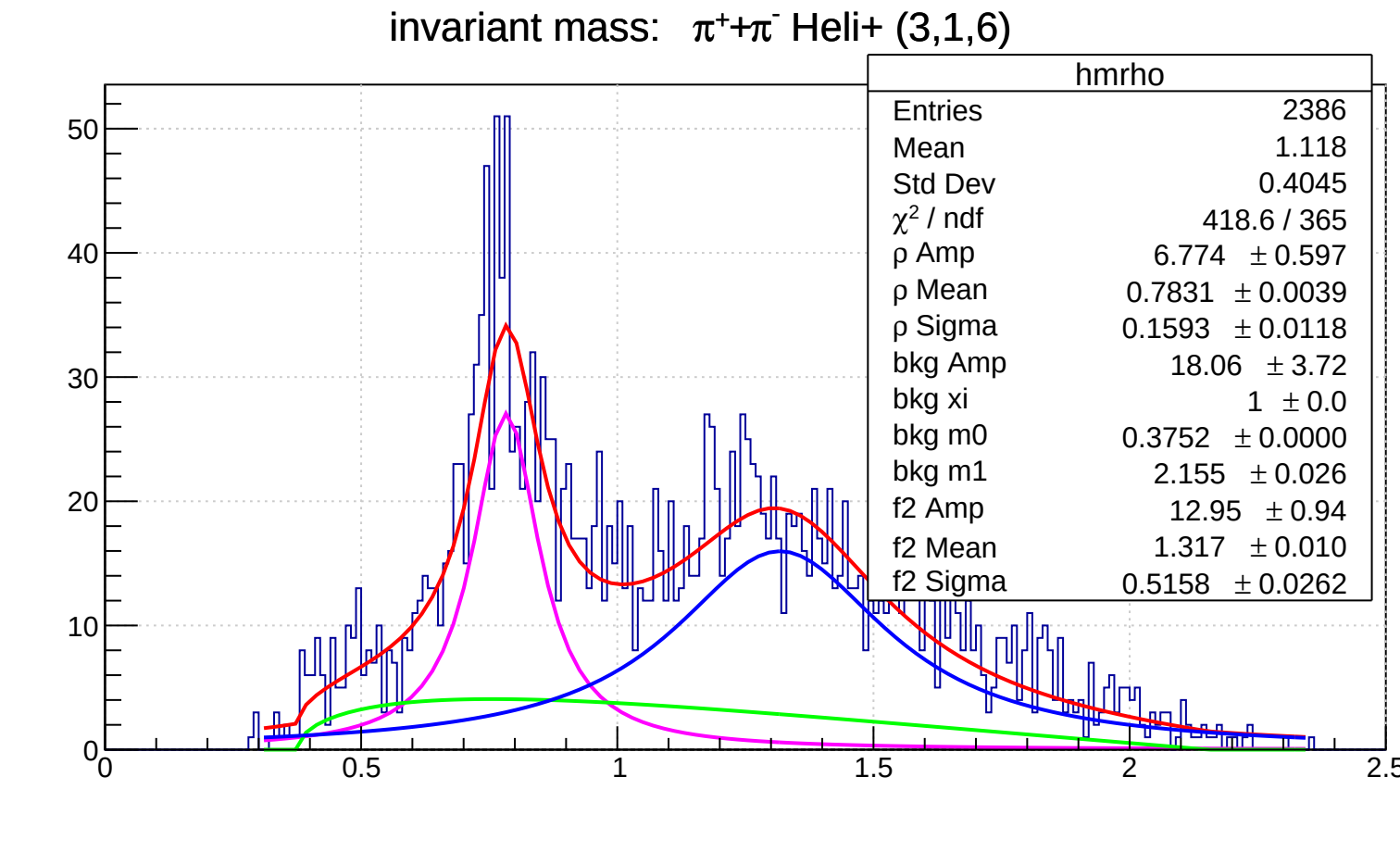

invariant mass: π+π- Heli+ (3,1,1)
hmrho
Entries 1471
Mean 1.212
Std Dev 0.4012
χ2 / ndf 431.9 / 348
ρ Amp 3.493 ± 6146913.648
ρ Mean 0.7738 ± 0.7390
ρ Sigma 0.129 ± 5.645
bkg Amp 30.24 ± 6142079.78
bkg xi 9.83 ± 6.01
bkg m0 0.4 ± 0.1
bkg m1 5.869 ± 6.872
f2 Amp 12.18 ± 6144754.40
f2 Mean 1.367 ± 0.685
f2 Sigma 0.5968 ± 0.7287
0
5
10
15
20
25
0
0.5
1
1.5
2
2.5

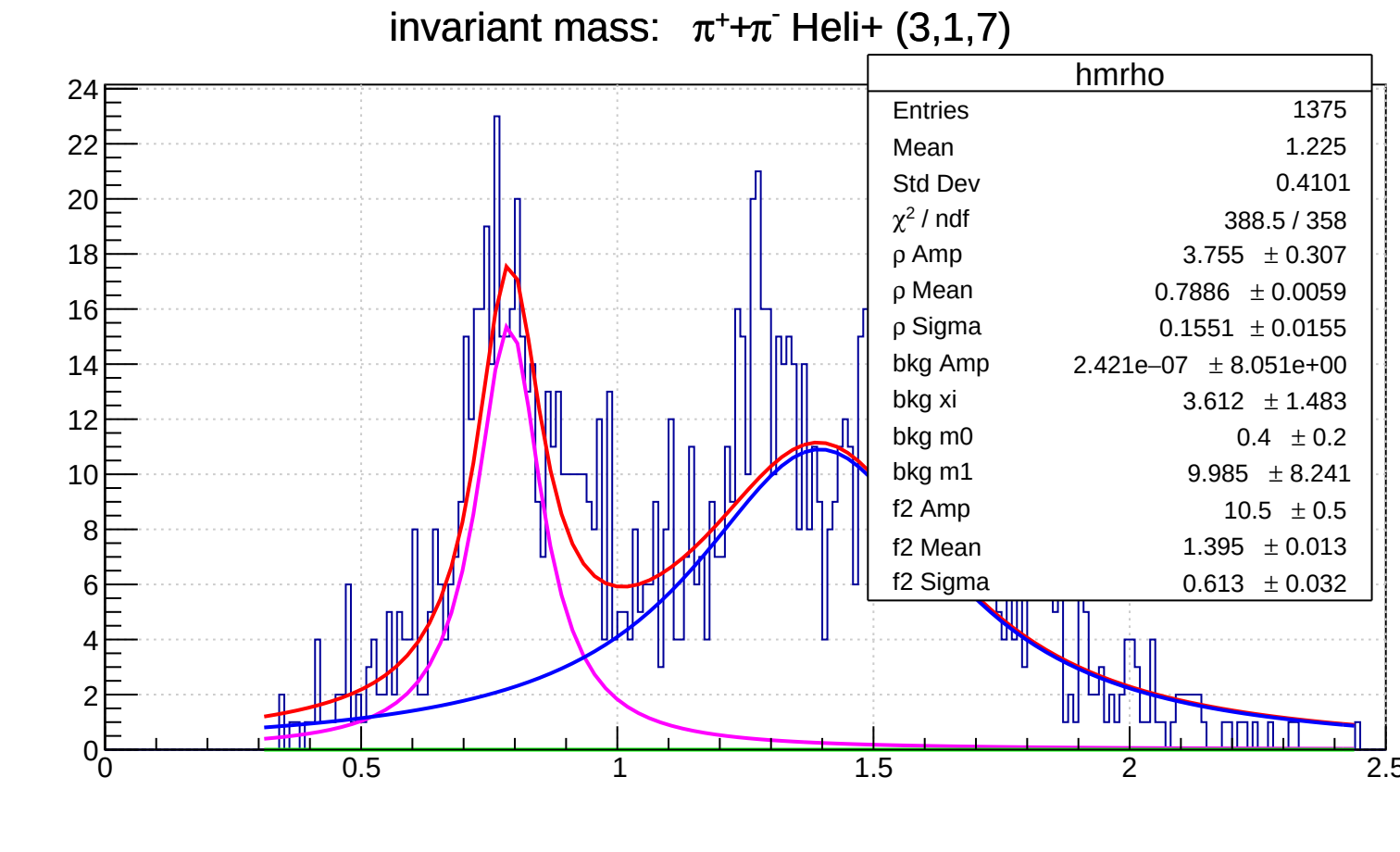

invariant mass: π⁺+π⁻ Heli+ (3,1,2)
hmrho
Entries 2453
Mean 1.089
Std Dev 0.4031
χ² / ndf 451.3 / 370
ρ Amp 11.16 ± 0.56
ρ Mean 0.7833 ± 0.0035
ρ Sigma 0.1836 ± 0.0109
bkg Amp 229 ± 151.7
bkg xi 10 ± 4.5
bkg m0 0.355 ± 0.000
bkg m1 8.86 ± 8.42
f2 Amp 14.11 ± 0.62
f2 Mean 1.329 ± 0.010
f2 Sigma 0.5439 ± 0.0236
0
10
20
30
40
50
60
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (3,1,3)
hmrho
Entries 3597
Mean 1.025
Std Dev 0.3873
χ² / ndf 434.2 / 369
ρ Amp 17.22 ± 1.00
ρ Mean 0.7775 ± 0.0030
ρ Sigma 0.1768 ± 0.0103
bkg Amp 410.3 ± 97.4
bkg xi 6.006 ± 0.945
bkg m0 0.355 ± 0.000
bkg m1 10 ± 0.0
f2 Amp 18.8 ± 1.0
f2 Mean 1.278 ± 0.009
f2 Sigma 0.5139 ± 0.0229
0
10
20
30
40
50
60
70
80
0
0.5
1
1.5
2
2.5


invariant mass: π+π- Heli+ (3,1,4)
hmrho
Entries 4521
Mean 1.016
Std Dev 0.3847
χ2 / ndf 483.2 / 369
ρ Amp 21.05 ± 1.08
ρ Mean 0.7796 ± 0.0024
ρ Sigma 0.1669 ± 0.0081
bkg Amp 43.89 ± 7.52
bkg xi 1 ± 0.0
bkg m0 0.3399 ± 0.0066
bkg m1 2.179 ± 0.039
f2 Amp 13.8 ± 1.7
f2 Mean 1.27 ± 0.01
f2 Sigma 0.3854 ± 0.0417
0
20
40
60
80
100
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (3,1,5)
hmrho
Entries 3798
Mean 1.062
Std Dev 0.3963
χ² / ndf 467.4 / 369
ρ Amp 14.3 ± 0.9
ρ Mean 0.7784 ± 0.0029
ρ Sigma 0.1637 ± 0.0099
bkg Amp 34.33 ± 5.94
bkg xi 1 ± 0.0
bkg m0 0.352 ± 0.007
bkg m1 2.185 ± 0.002
f2 Amp 16.49 ± 1.29
f2 Mean 1.289 ± 0.010
f2 Sigma 0.4994 ± 0.0282
0
10
20
30
40
50
60
70
80
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (3,1,6)
hmrho
Entries 2386
Mean 1.118
Std Dev 0.4045
χ² / ndf 418.6 / 365
ρ Amp 6.774 ± 0.597
ρ Mean 0.7831 ± 0.0039
ρ Sigma 0.1593 ± 0.0118
bkg Amp 18.06 ± 3.72
bkg xi 1 ± 0.0
bkg m0 0.3752 ± 0.0000
bkg m1 2.155 ± 0.026
f2 Amp 12.95 ± 0.94
f2 Mean 1.317 ± 0.010
f2 Sigma 0.5158 ± 0.0262
0
10
20
30
40
50
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (3,1,7)
hmrho
Entries 1375
Mean 1.225
Std Dev 0.4101
χ² / ndf 388.5 / 358
ρ Amp 3.755 ± 0.307
ρ Mean 0.7886 ± 0.0059
ρ Sigma 0.1551 ± 0.0155
bkg Amp 2.421e−07 ± 8.051e+00
bkg xi 3.612 ± 1.483
bkg m0 0.4 ± 0.2
bkg m1 9.985 ± 8.241
f2 Amp 10.5 ± 0.5
f2 Mean 1.395 ± 0.013
f2 Sigma 0.613 ± 0.032
0
2
4
6
8
10
12
14
16
18
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22
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0
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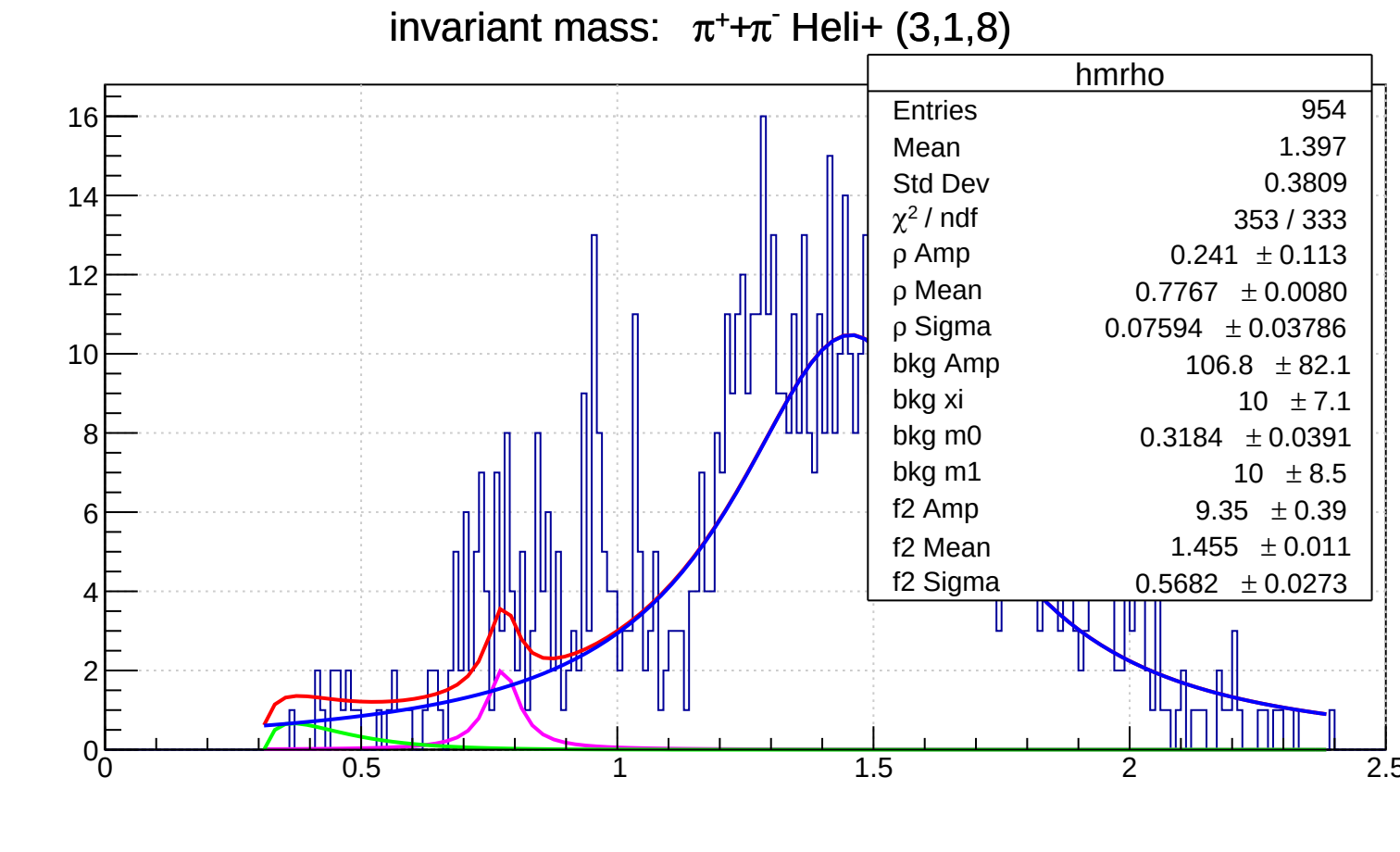
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (3,1,8)
hmrho
Entries 954
Mean 1.397
Std Dev 0.3809
χ² / ndf 353 / 333
ρ Amp 0.241 ± 0.113
ρ Mean 0.7767 ± 0.0080
ρ Sigma 0.07594 ± 0.03786
bkg Amp 106.8 ± 82.1
bkg xi 10 ± 7.1
bkg m0 0.3184 ± 0.0391
bkg m1 10 ± 8.5
f2 Amp 9.35 ± 0.39
f2 Mean 1.455 ± 0.011
f2 Sigma 0.5682 ± 0.0273
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2
4
6
8
10
12
14
16
0
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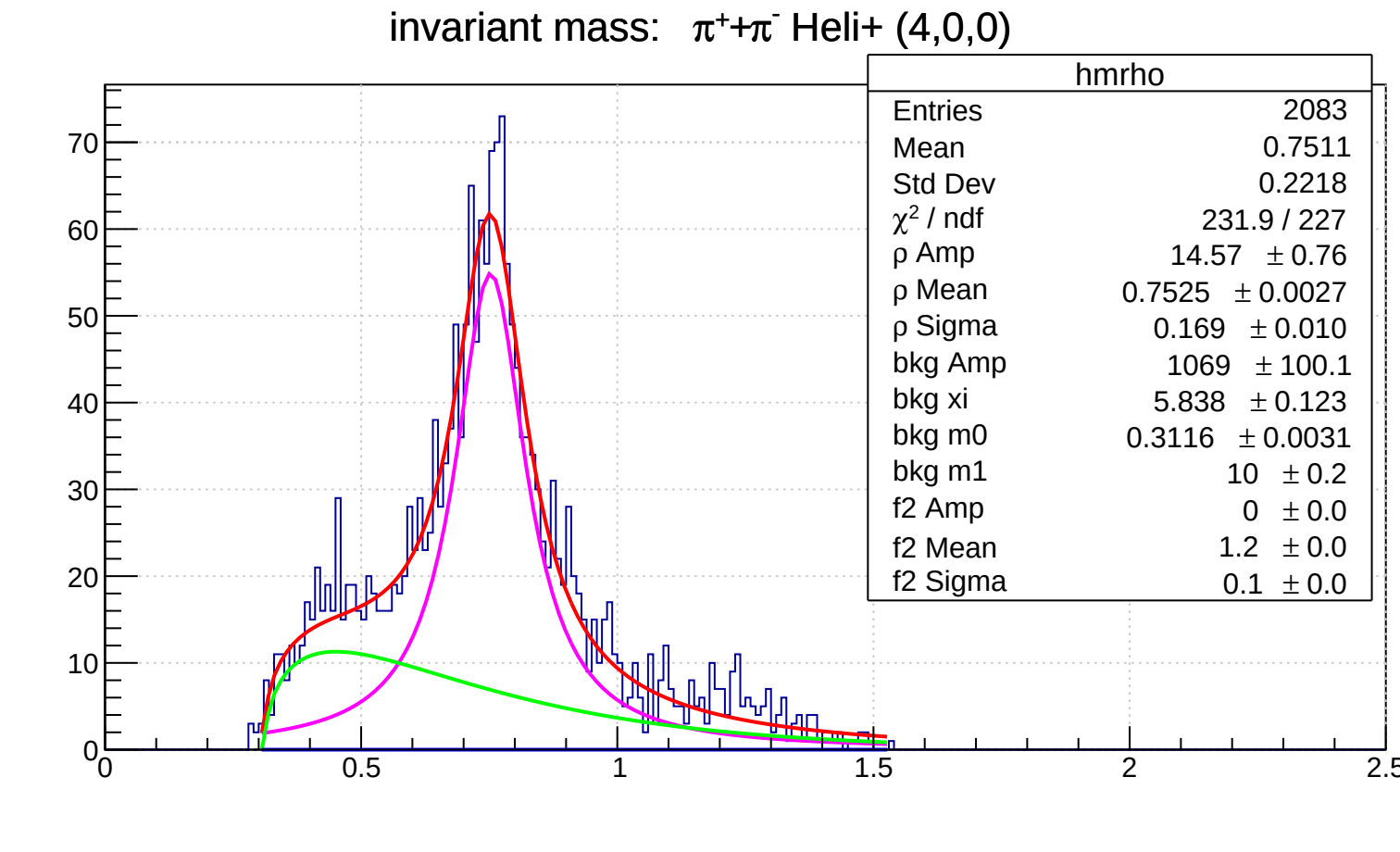
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (4,0,0)
hmrho
Entries 2083
Mean 0.7511
Std Dev 0.2218
χ² / ndf 231.9 / 227
ρ Amp 14.57 ± 0.76
ρ Mean 0.7525 ± 0.0027
ρ Sigma 0.169 ± 0.010
bkg Amp 1069 ± 100.1
bkg xi 5.838 ± 0.123
bkg m0 0.3116 ± 0.0031
bkg m1 10 ± 0.2
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
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20
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40
50
60
70
0
0.5
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1.5
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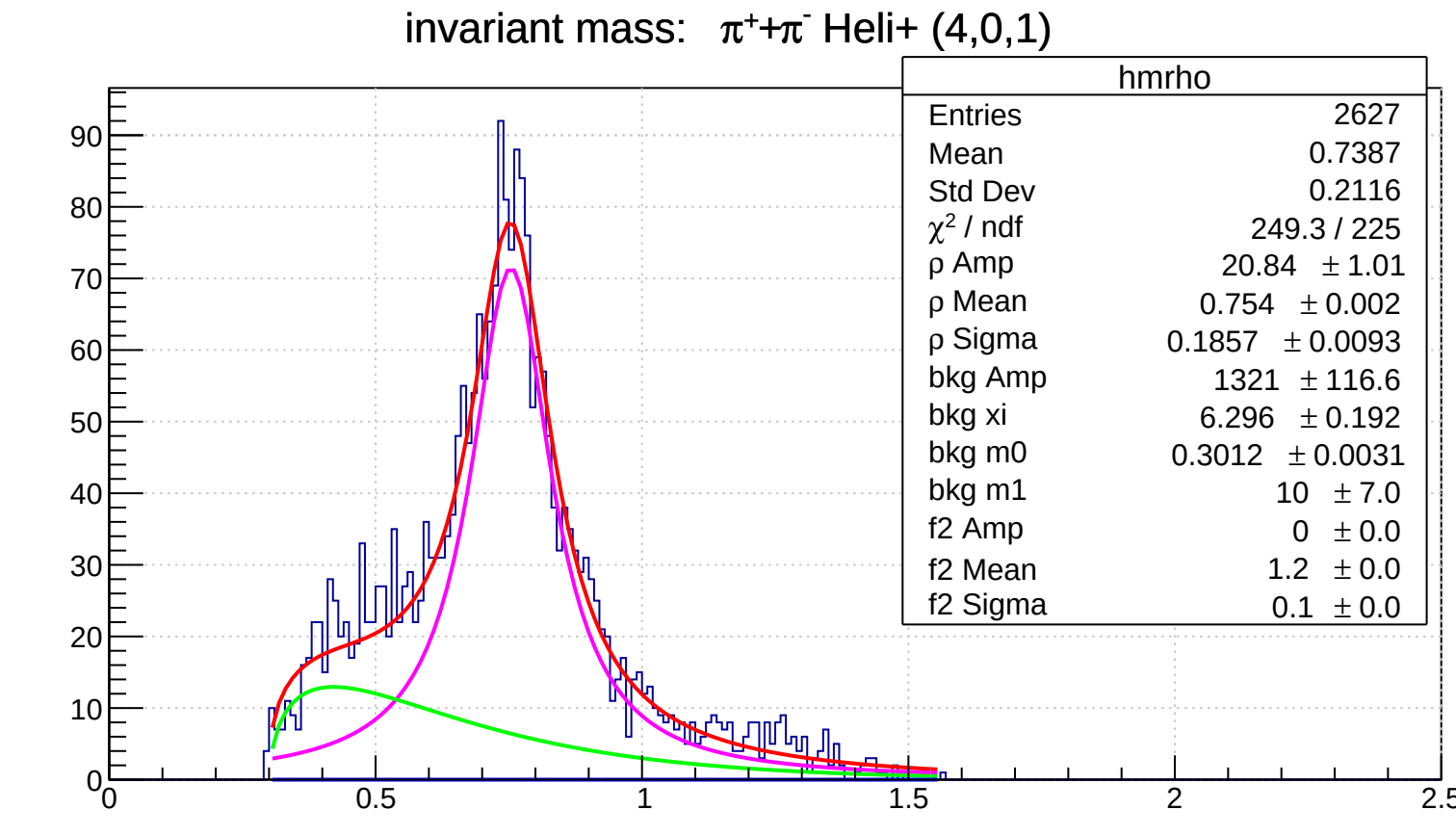
2.5


invariant mass: π⁺+π⁻ Heli+ (4,0,1)
hmrho
Entries 2627
Mean 0.7387
Std Dev 0.2116
χ² / ndf 249.3 / 225
ρ Amp 20.84 ± 1.01
ρ Mean 0.754 ± 0.002
ρ Sigma 0.1857 ± 0.0093
bkg Amp 1321 ± 116.6
bkg xi 6.296 ± 0.192
bkg m0 0.3012 ± 0.0031
bkg m1 10 ± 7.0
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
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40
50
60
70
80
90
0
0.5
1
1.5
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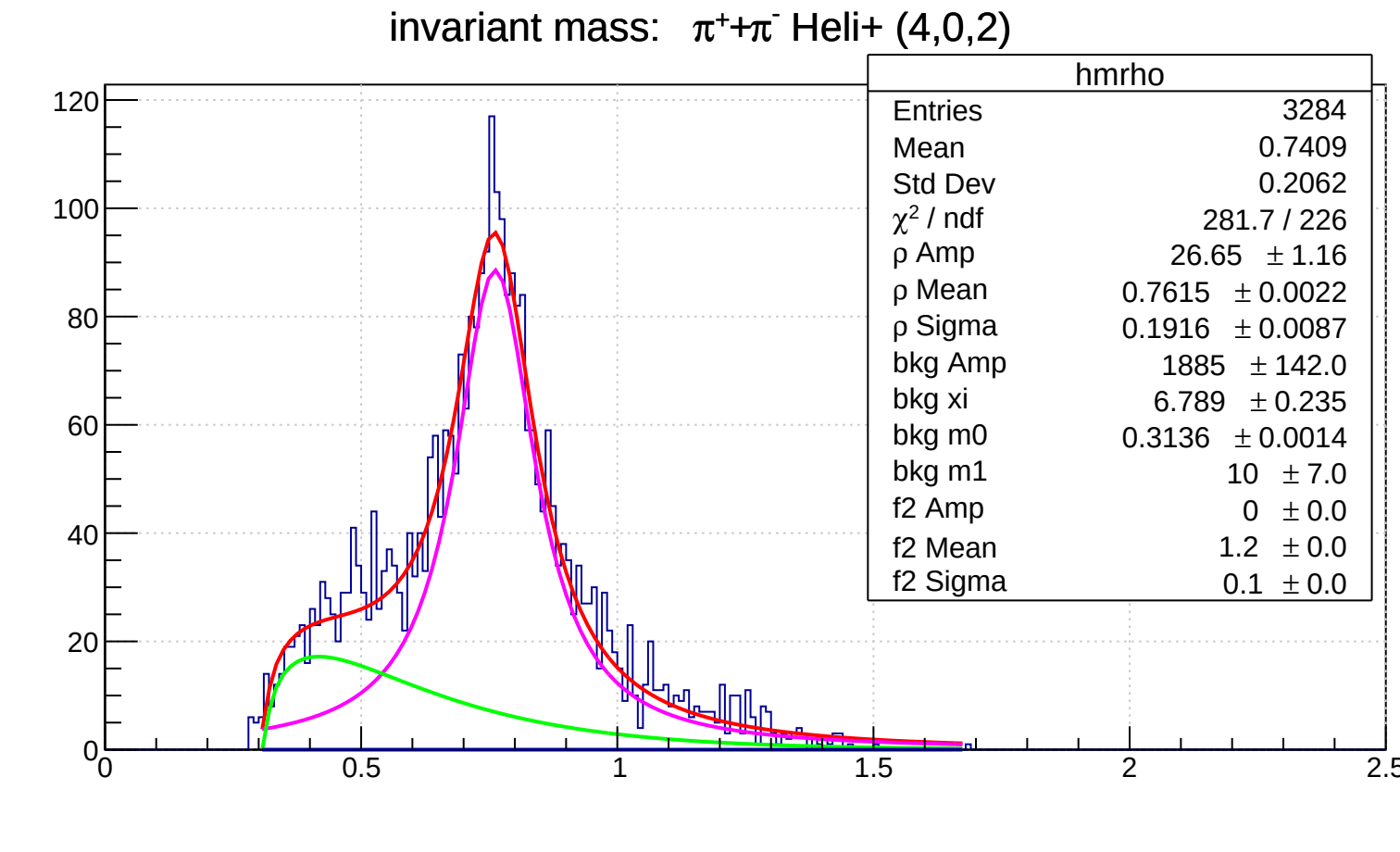
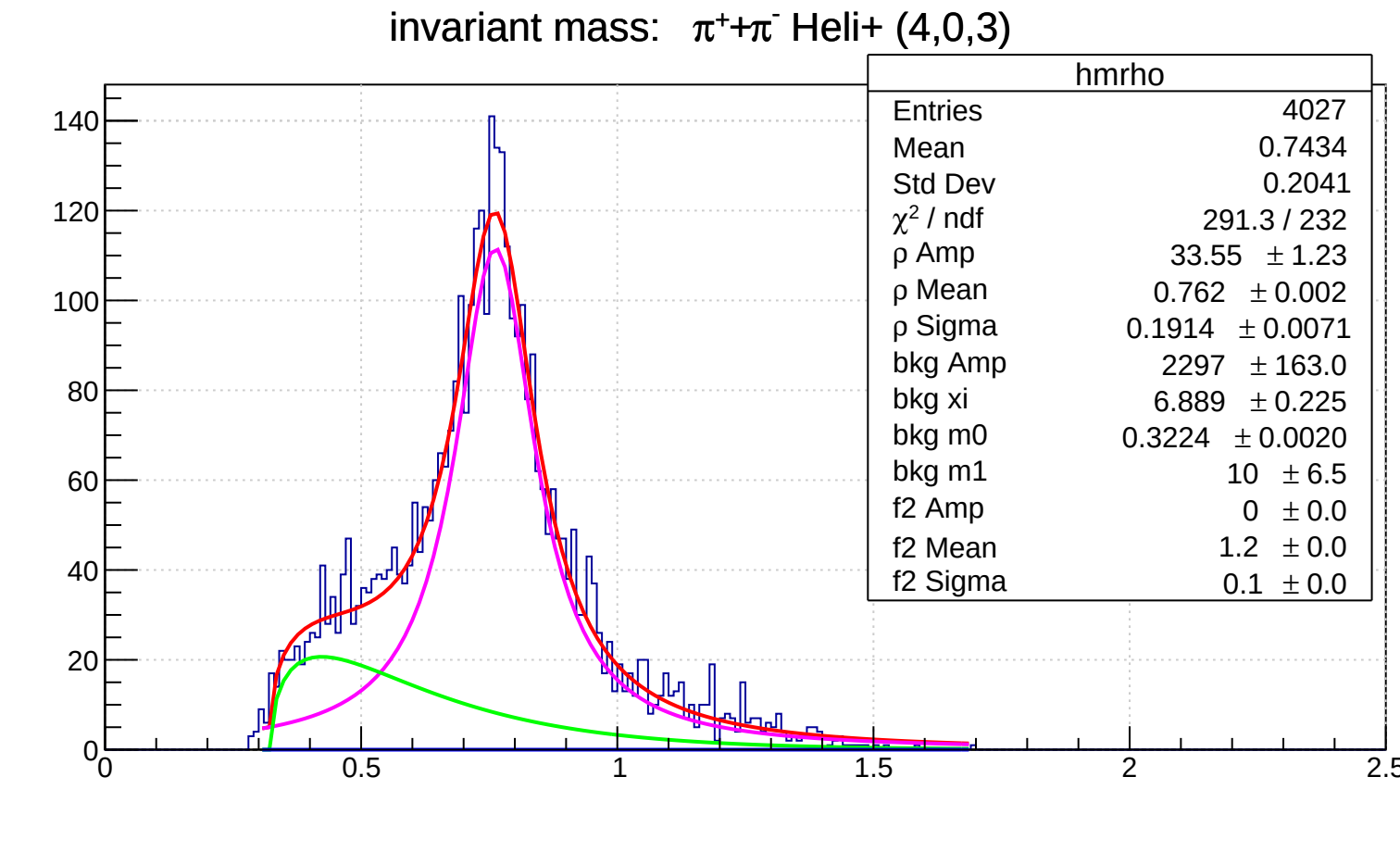
2.5


invariant mass: π⁺+π⁻ Heli+ (4,0,2)
hmrho
Entries 3284
Mean 0.7409
Std Dev 0.2062
χ² / ndf 281.7 / 226
ρ Amp 26.65 ± 1.16
ρ Mean 0.7615 ± 0.0022
ρ Sigma 0.1916 ± 0.0087
bkg Amp 1885 ± 142.0
bkg xi 6.789 ± 0.235
bkg m0 0.3136 ± 0.0014
bkg m1 10 ± 7.0
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
120
100
80
60
40
20
0
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (4,0,3)
hmrho
Entries 4027
Mean 0.7434
Std Dev 0.2041
χ² / ndf 291.3 / 232
ρ Amp 33.55 ± 1.23
ρ Mean 0.762 ± 0.002
ρ Sigma 0.1914 ± 0.0071
bkg Amp 2297 ± 163.0
bkg xi 6.889 ± 0.225
bkg m0 0.3224 ± 0.0020
bkg m1 10 ± 6.5
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
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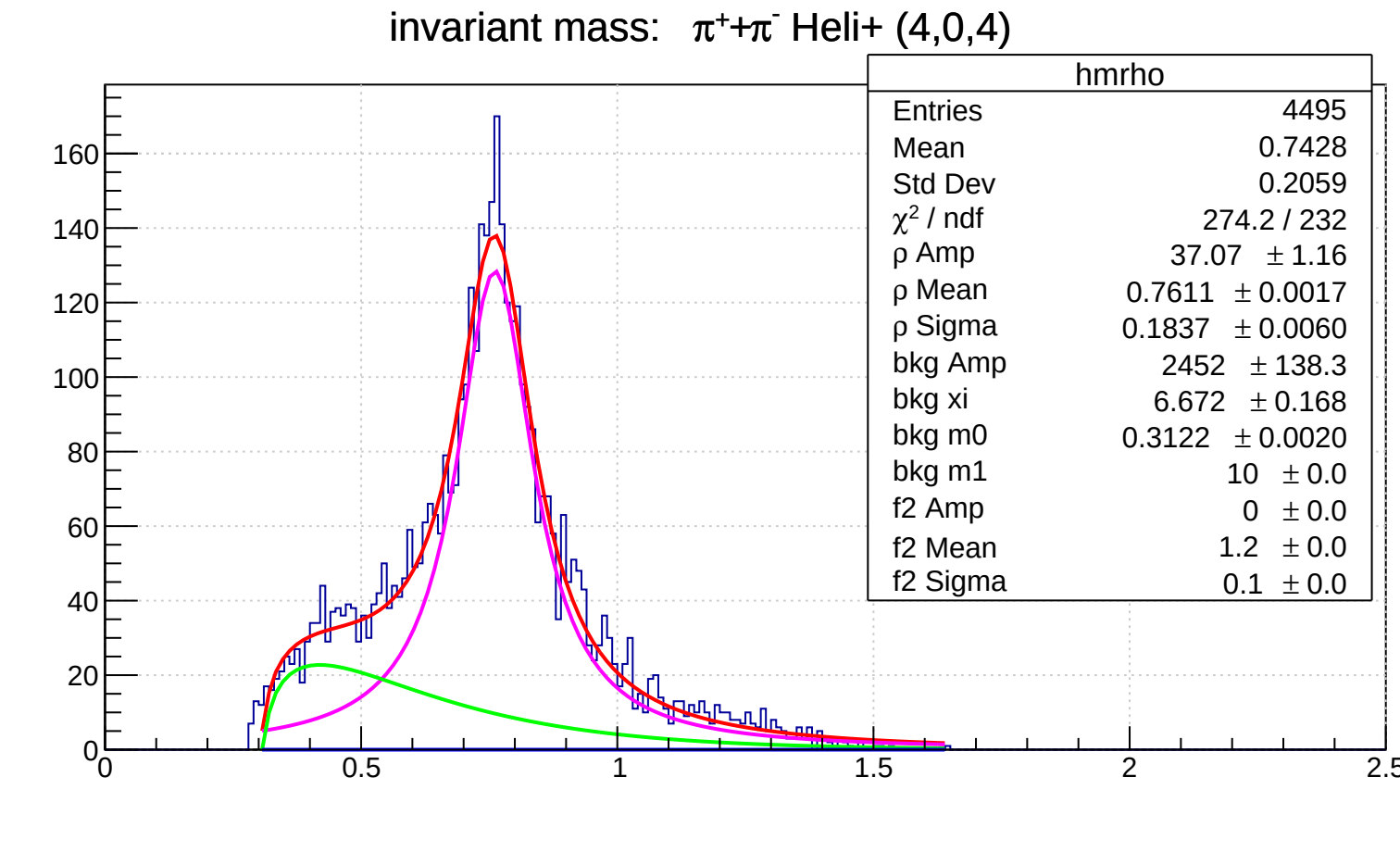
40
60
80
100
120
140
0
0.5
1
1.5
2
2.5


invariant mass: π+π- Heli+ (4,0,4)
hmrho
Entries 4495
Mean 0.7428
Std Dev 0.2059
χ2 / ndf 274.2 / 232
ρ Amp 37.07 ± 1.16
ρ Mean 0.7611 ± 0.0017
ρ Sigma 0.1837 ± 0.0060
bkg Amp 2452 ± 138.3
bkg xi 6.672 ± 0.168
bkg m0 0.3122 ± 0.0020
bkg m1 10 ± 0.0
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
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40
60
80
100
120
140
160
0
0.5
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1.5
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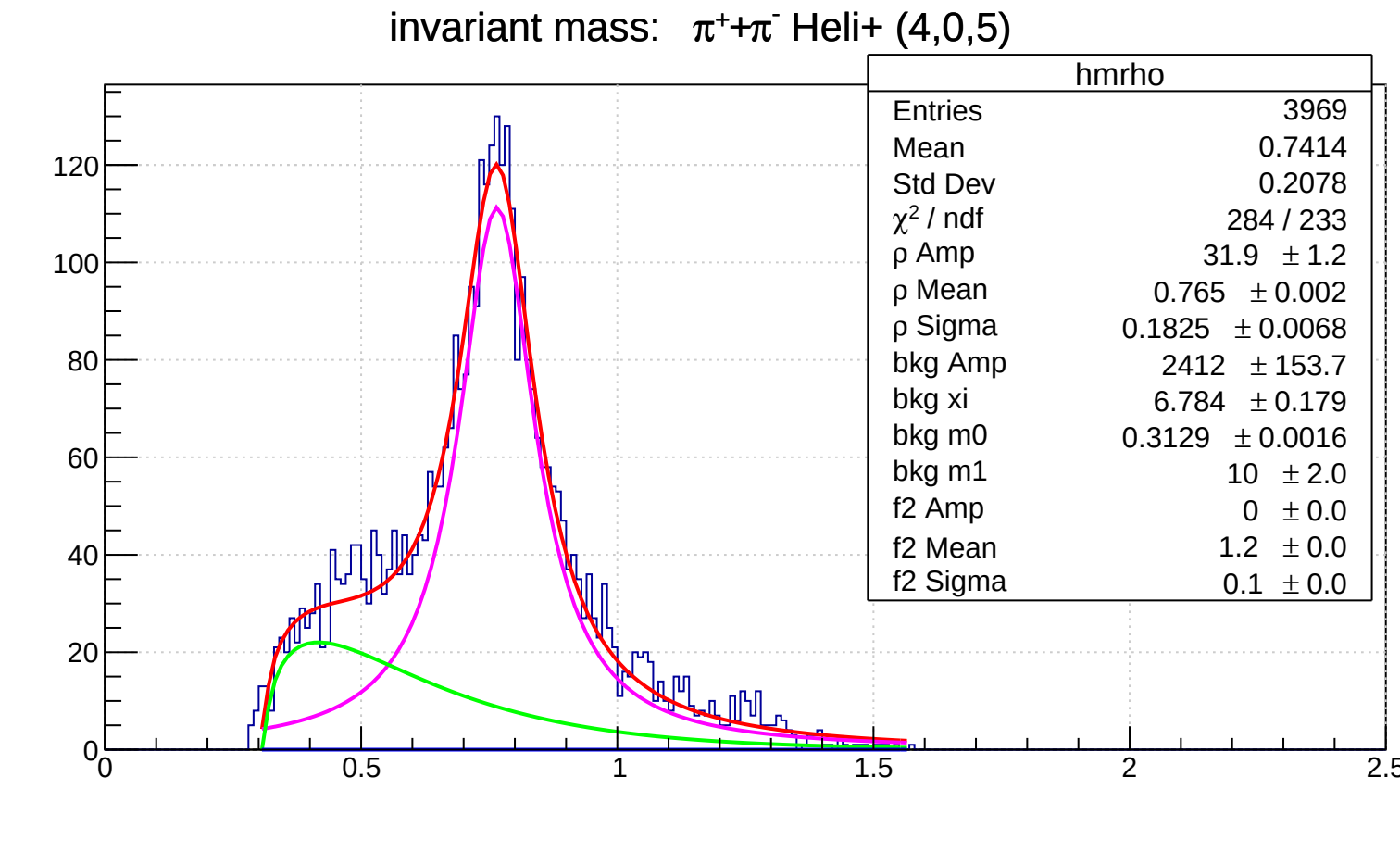
2.5


invariant mass: π+π- Heli+ (4,0,5)
hmrho
Entries 3969
Mean 0.7414
Std Dev 0.2078
χ2 / ndf 284 / 233
ρ Amp 31.9 ± 1.2
ρ Mean 0.765 ± 0.002
ρ Sigma 0.1825 ± 0.0068
bkg Amp 2412 ± 153.7
bkg xi 6.784 ± 0.179
bkg m0 0.3129 ± 0.0016
bkg m1 10 ± 2.0
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
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80
100
120
0
0.5
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1.5
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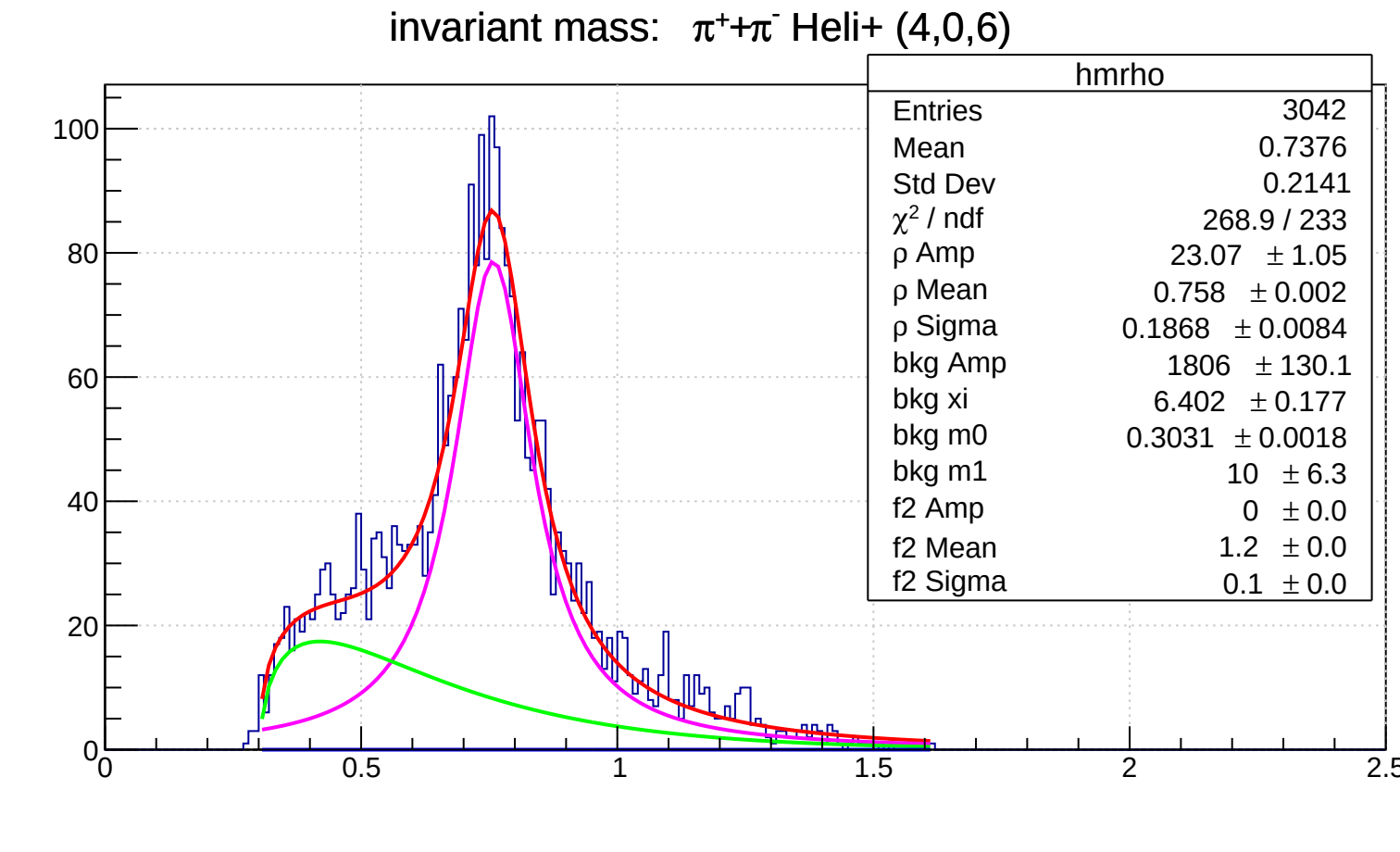
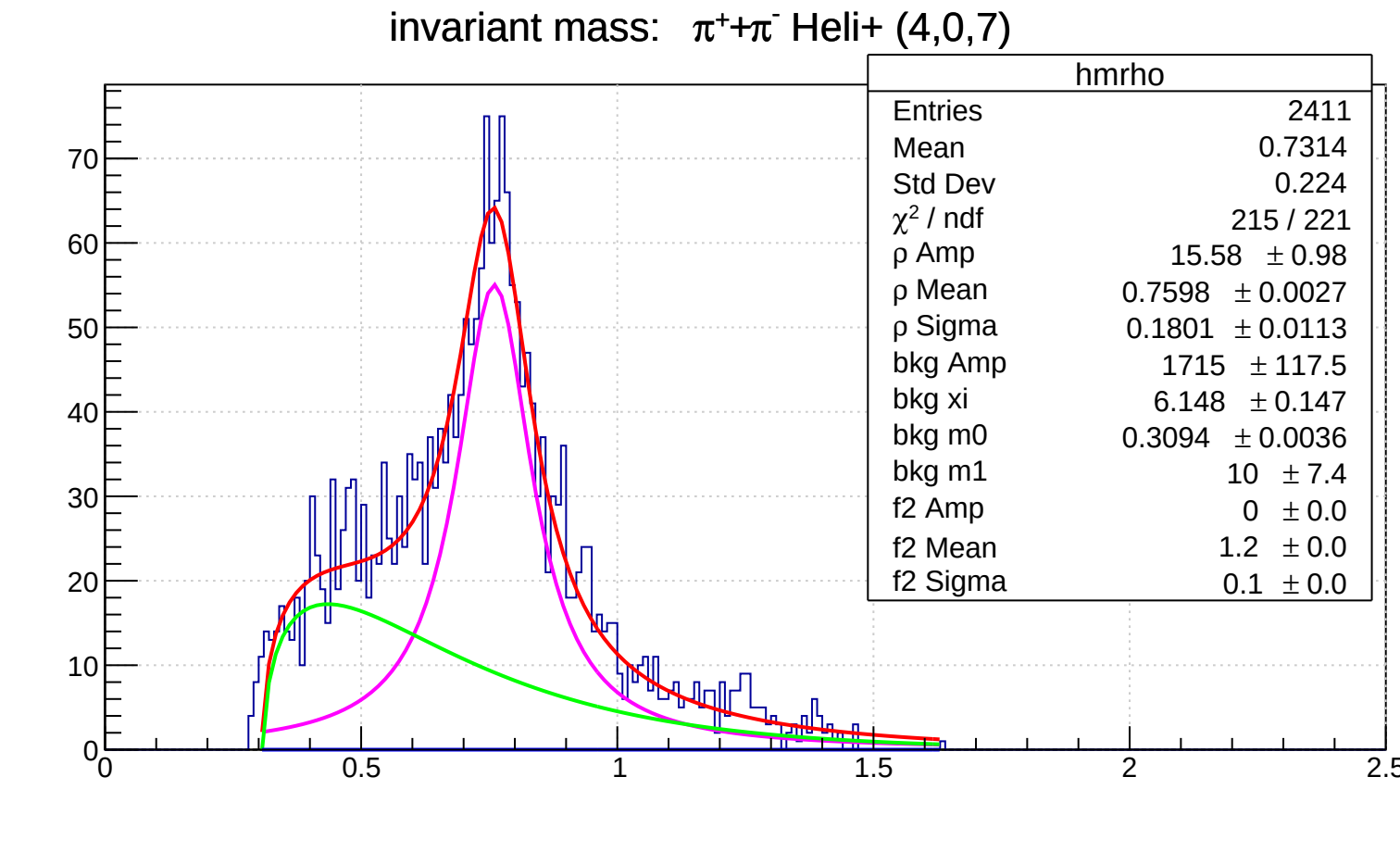
2.5


invariant mass: π⁺+π⁻ Heli+ (4,0,6)
hmrho
Entries 3042
Mean 0.7376
Std Dev 0.2141
χ² / ndf 268.9 / 233
ρ Amp 23.07 ± 1.05
ρ Mean 0.758 ± 0.002
ρ Sigma 0.1868 ± 0.0084
bkg Amp 1806 ± 130.1
bkg xi 6.402 ± 0.177
bkg m0 0.3031 ± 0.0018
bkg m1 10 ± 6.3
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
20
40
60
80
100
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (4,0,7)
hmrho
Entries 2411
Mean 0.7314
Std Dev 0.224
χ² / ndf 215 / 221
ρ Amp 15.58 ± 0.98
ρ Mean 0.7598 ± 0.0027
ρ Sigma 0.1801 ± 0.0113
bkg Amp 1715 ± 117.5
bkg xi 6.148 ± 0.147
bkg m0 0.3094 ± 0.0036
bkg m1 10 ± 7.4
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
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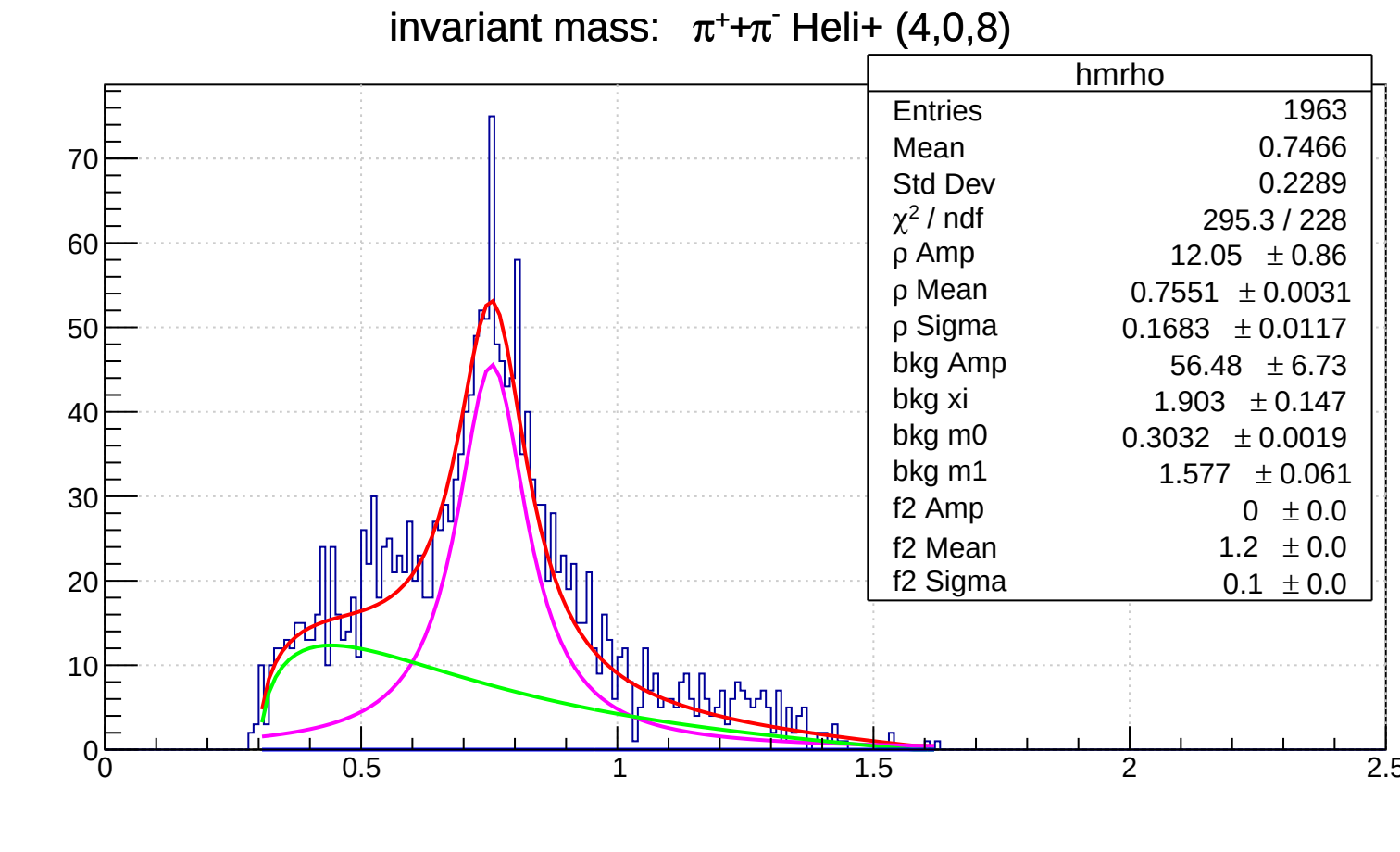
60
70
0
0.5
1
1.5
2
2.5


invariant mass: π+π- Heli+ (4,0,8)
hmrho
Entries 1963
Mean 0.7466
Std Dev 0.2289
χ2 / ndf 295.3 / 228
ρ Amp 12.05 ± 0.86
ρ Mean 0.7551 ± 0.0031
ρ Sigma 0.1683 ± 0.0117
bkg Amp 56.48 ± 6.73
bkg xi 1.903 ± 0.147
bkg m0 0.3032 ± 0.0019
bkg m1 1.577 ± 0.061
f2 Amp 0 ± 0.0
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1 ± 0.0
0
10
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30
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60
70
0
0.5
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1.5
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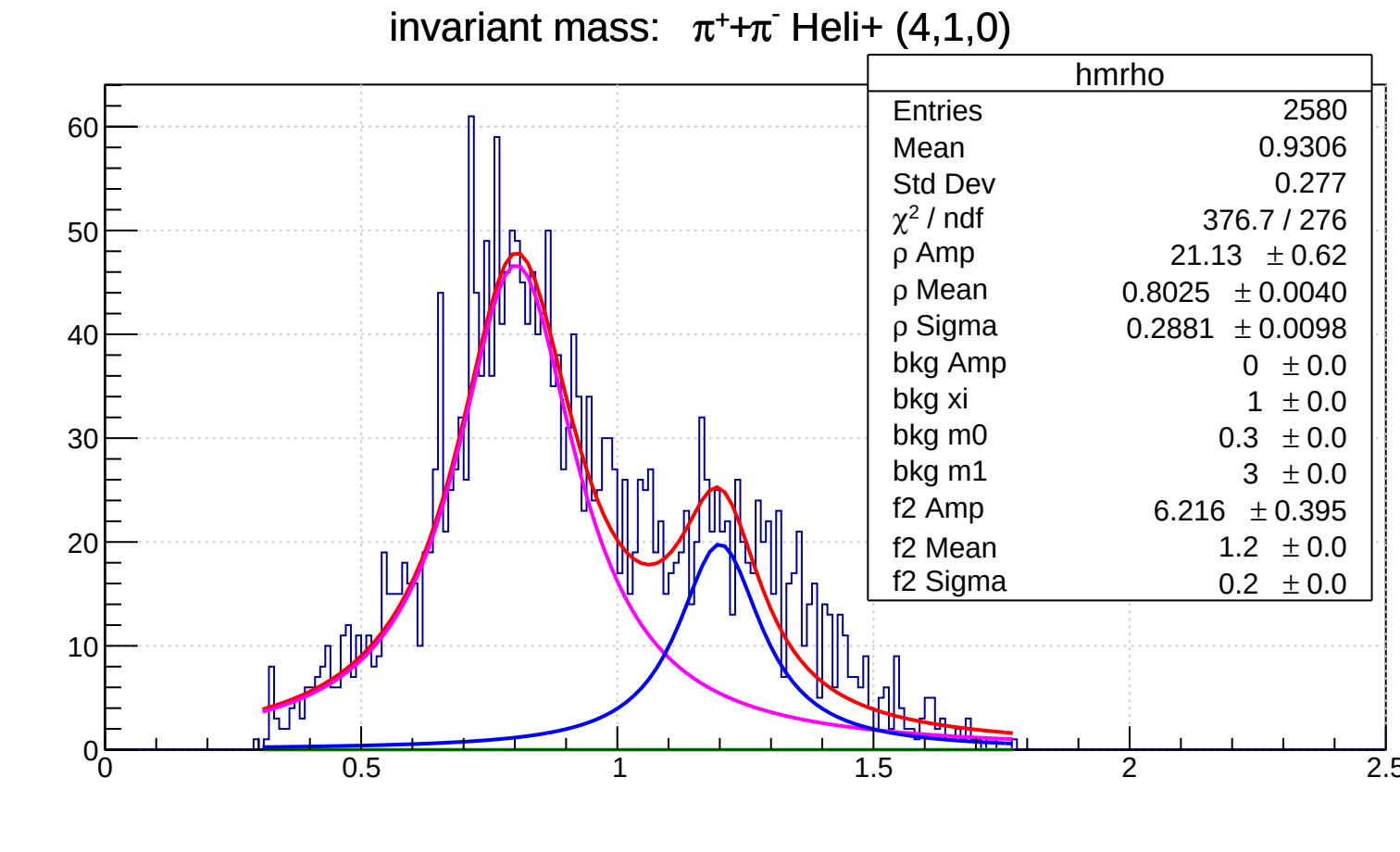
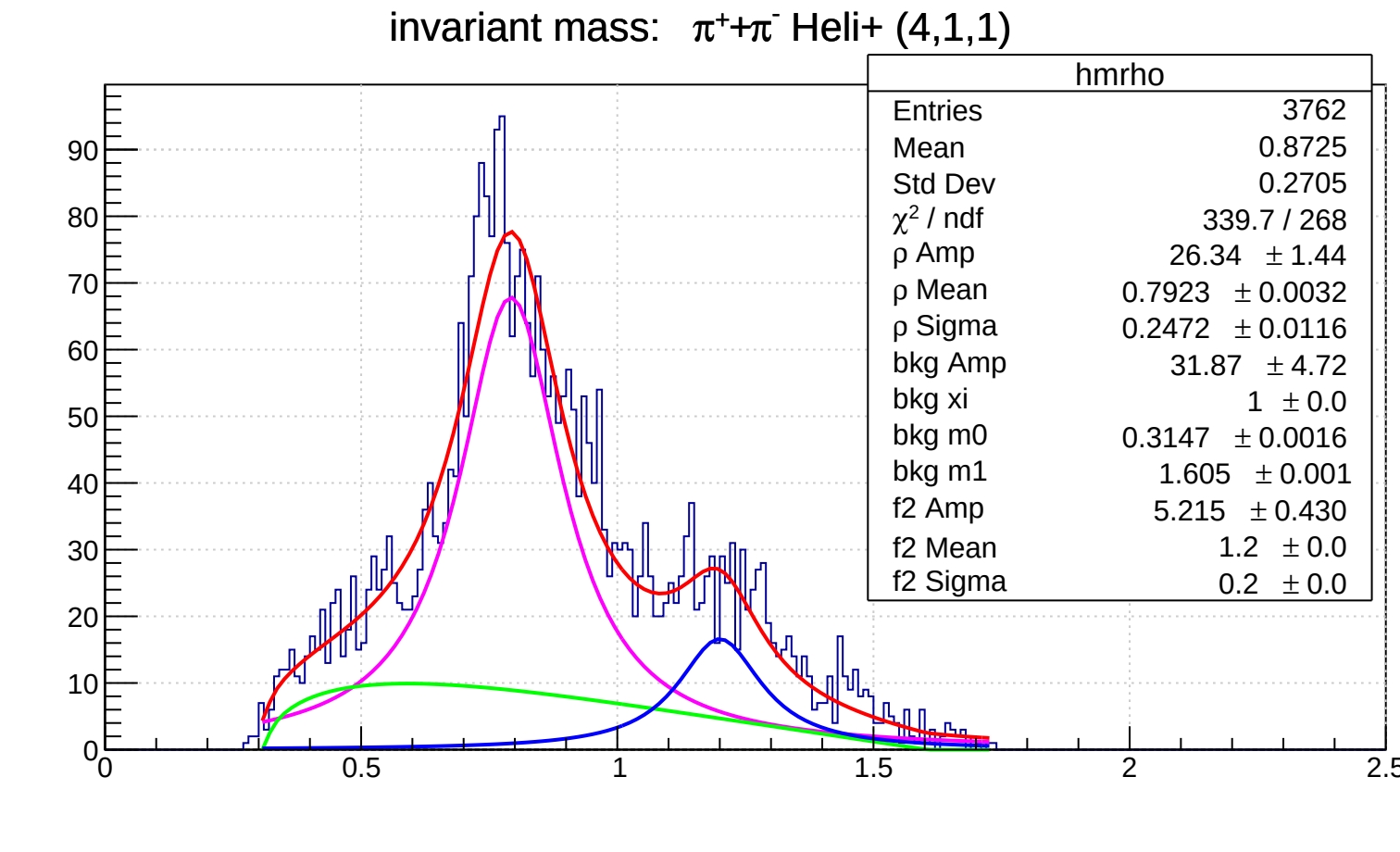
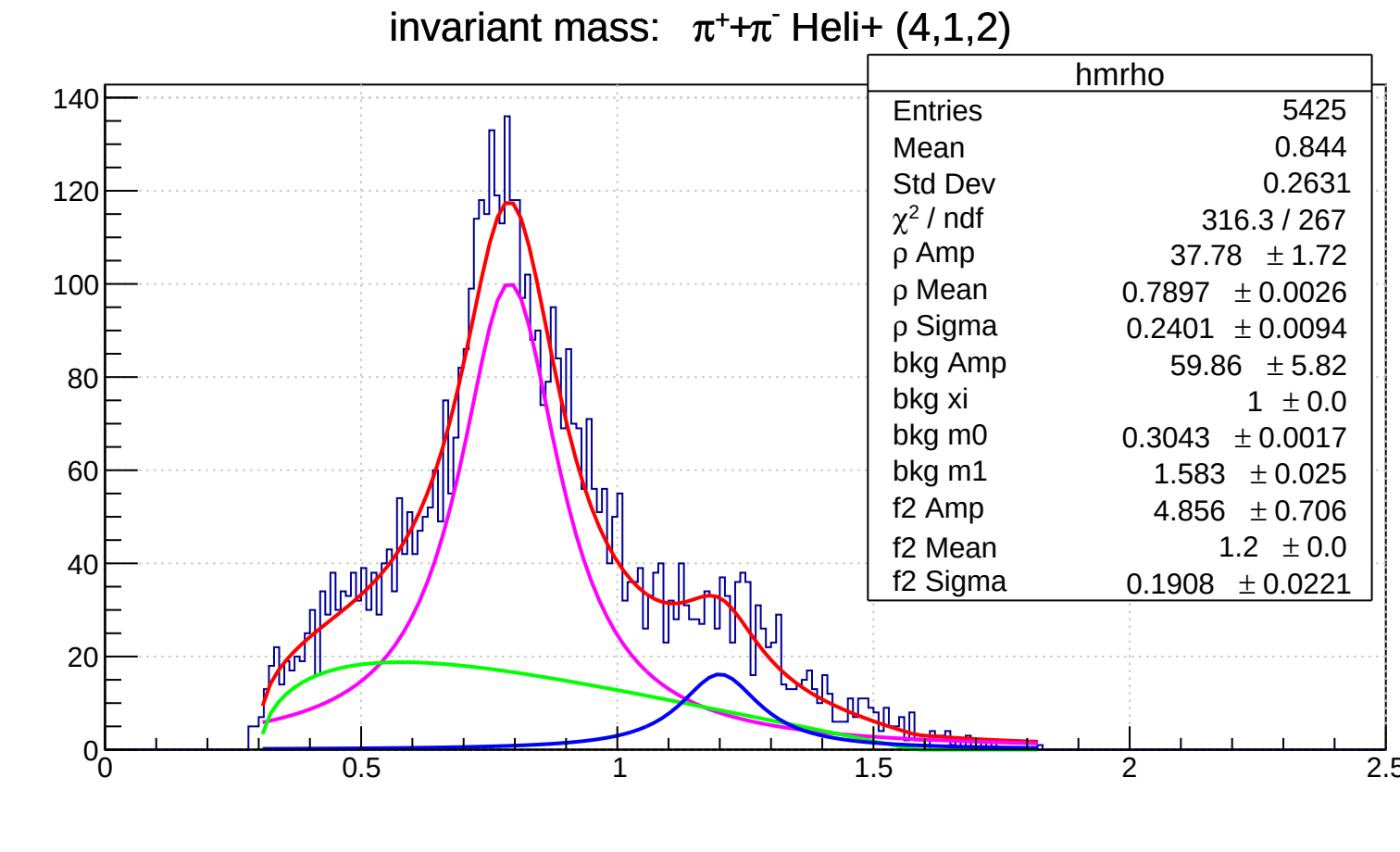
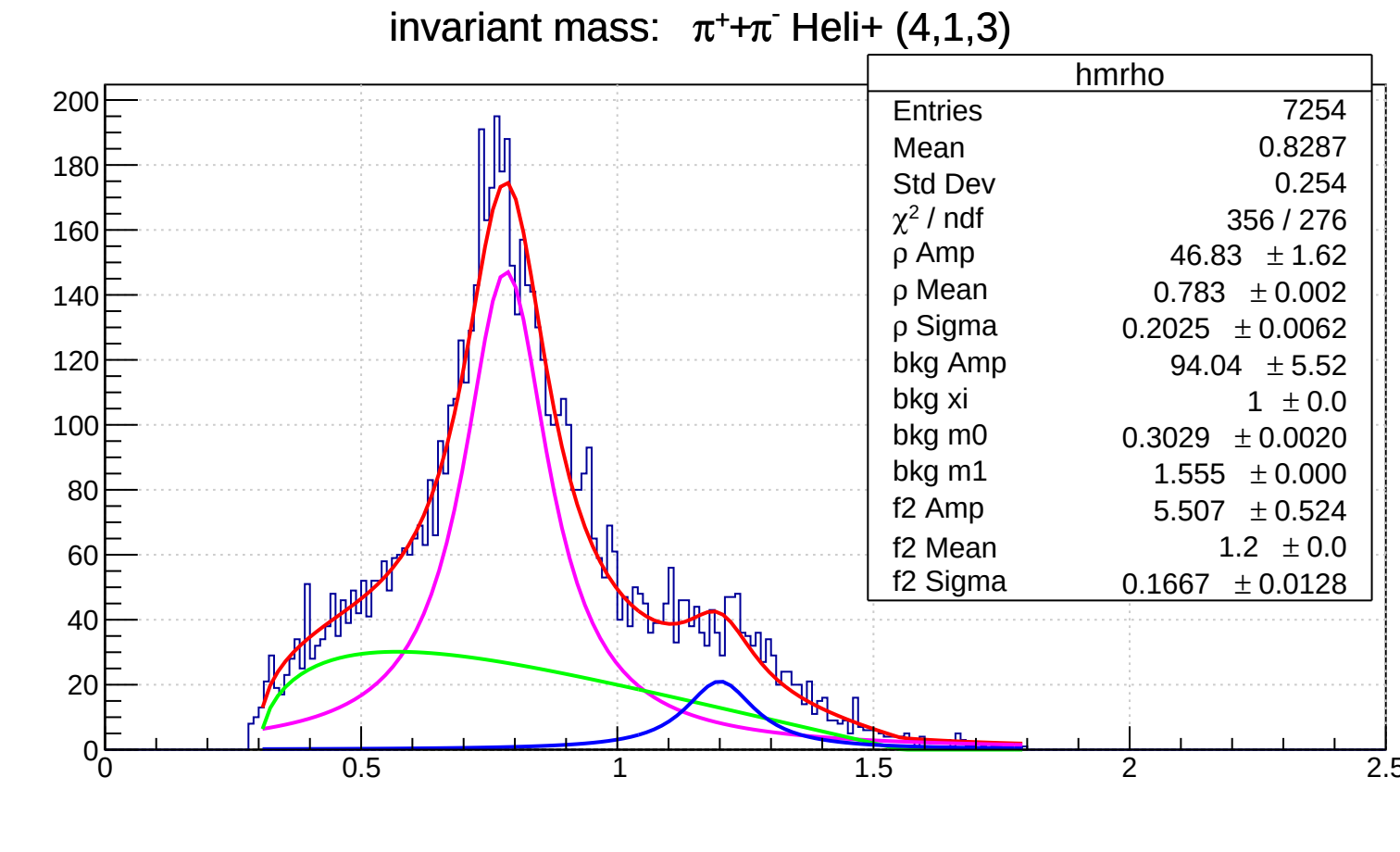
2.5


invariant mass: π⁺+π⁻ Heli+ (4,1,0)
hmrho
Entries 2580
Mean 0.9306
Std Dev 0.277
χ² / ndf 376.7 / 276
ρ Amp 21.13 ± 0.62
ρ Mean 0.8025 ± 0.0040
ρ Sigma 0.2881 ± 0.0098
bkg Amp 0 ± 0.0
bkg xi 1 ± 0.0
bkg m0 0.3 ± 0.0
bkg m1 3 ± 0.0
f2 Amp 6.216 ± 0.395
f2 Mean 1.2 ± 0.0
f2 Sigma 0.2 ± 0.0
0
10
20
30
40
50
60
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (4,1,1)
hmrho
Entries 3762
Mean 0.8725
Std Dev 0.2705
χ² / ndf 339.7 / 268
ρ Amp 26.34 ± 1.44
ρ Mean 0.7923 ± 0.0032
ρ Sigma 0.2472 ± 0.0116
bkg Amp 31.87 ± 4.72
bkg xi 1 ± 0.0
bkg m0 0.3147 ± 0.0016
bkg m1 1.605 ± 0.001
f2 Amp 5.215 ± 0.430
f2 Mean 1.2 ± 0.0
f2 Sigma 0.2 ± 0.0
0
10
20
30
40
50
60
70
80
90
0
0.5
1
1.5
2
2.5


invariant mass: π+π- Heli+ (4,1,2)
hmrho
Entries 5425
Mean 0.844
Std Dev 0.2631
χ2 / ndf 316.3 / 267
ρ Amp 37.78 ± 1.72
ρ Mean 0.7897 ± 0.0026
ρ Sigma 0.2401 ± 0.0094
bkg Amp 59.86 ± 5.82
bkg xi 1 ± 0.0
bkg m0 0.3043 ± 0.0017
bkg m1 1.583 ± 0.025
f2 Amp 4.856 ± 0.706
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1908 ± 0.0221
0
20
40
60
80
100
120
140
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (4,1,3)
hmrho
Entries 7254
Mean 0.8287
Std Dev 0.254
χ² / ndf 356 / 276
ρ Amp 46.83 ± 1.62
ρ Mean 0.783 ± 0.002
ρ Sigma 0.2025 ± 0.0062
bkg Amp 94.04 ± 5.52
bkg xi 1 ± 0.0
bkg m0 0.3029 ± 0.0020
bkg m1 1.555 ± 0.000
f2 Amp 5.507 ± 0.524
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1667 ± 0.0128
0
20
40
60
80
100
120
140
160
180
200
0
0.5
1
1.5
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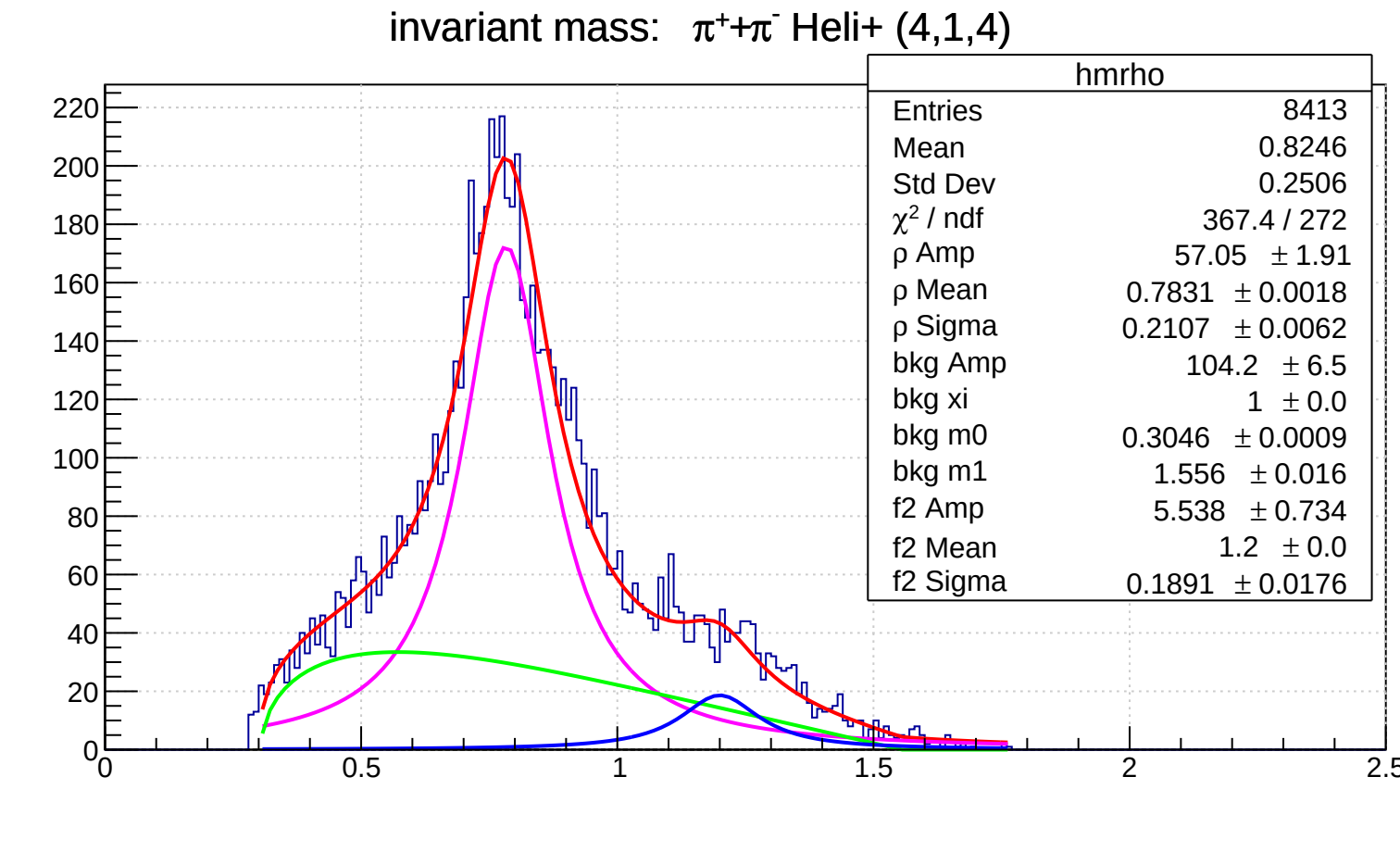
2.5


invariant mass: π⁺+π⁻ Heli+ (4,1,4)
hmrho
Entries 8413
Mean 0.8246
Std Dev 0.2506
χ² / ndf 367.4 / 272
ρ Amp 57.05 ± 1.91
ρ Mean 0.7831 ± 0.0018
ρ Sigma 0.2107 ± 0.0062
bkg Amp 104.2 ± 6.5
bkg xi 1 ± 0.0
bkg m0 0.3046 ± 0.0009
bkg m1 1.556 ± 0.016
f2 Amp 5.538 ± 0.734
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1891 ± 0.0176
0
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40
60
80
100
120
140
160
180
200
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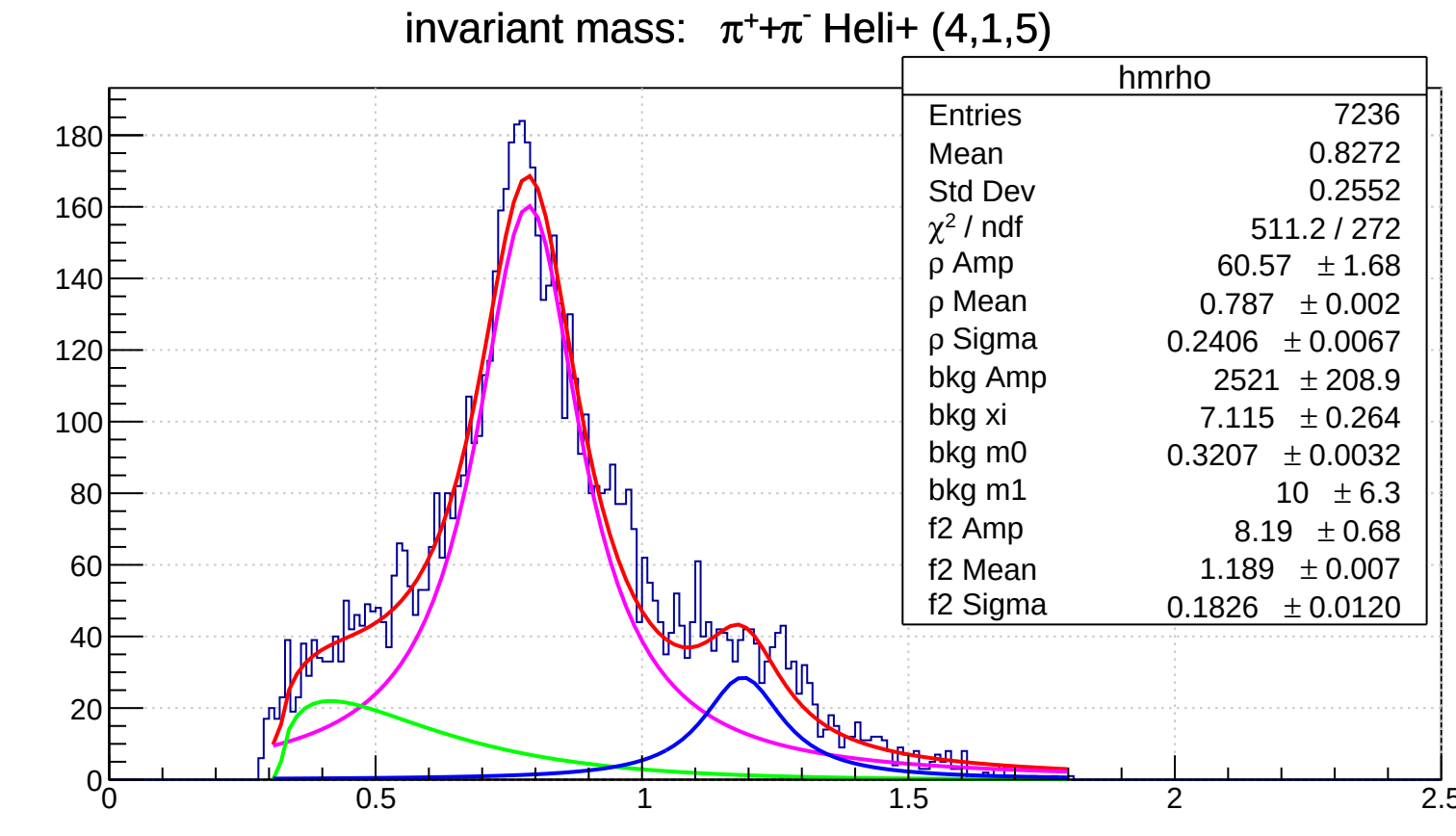
0
0.5
1
1.5
2
2.5


invariant mass: π⁺+π⁻ Heli+ (4,1,5)
hmrho
Entries 7236
Mean 0.8272
Std Dev 0.2552
χ² / ndf 511.2 / 272
ρ Amp 60.57 ± 1.68
ρ Mean 0.787 ± 0.002
ρ Sigma 0.2406 ± 0.0067
bkg Amp 2521 ± 208.9
bkg xi 7.115 ± 0.264
bkg m0 0.3207 ± 0.0032
bkg m1 10 ± 6.3
f2 Amp 8.19 ± 0.68
f2 Mean 1.189 ± 0.007
f2 Sigma 0.1826 ± 0.0120
0
20
40
60
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0
0.5
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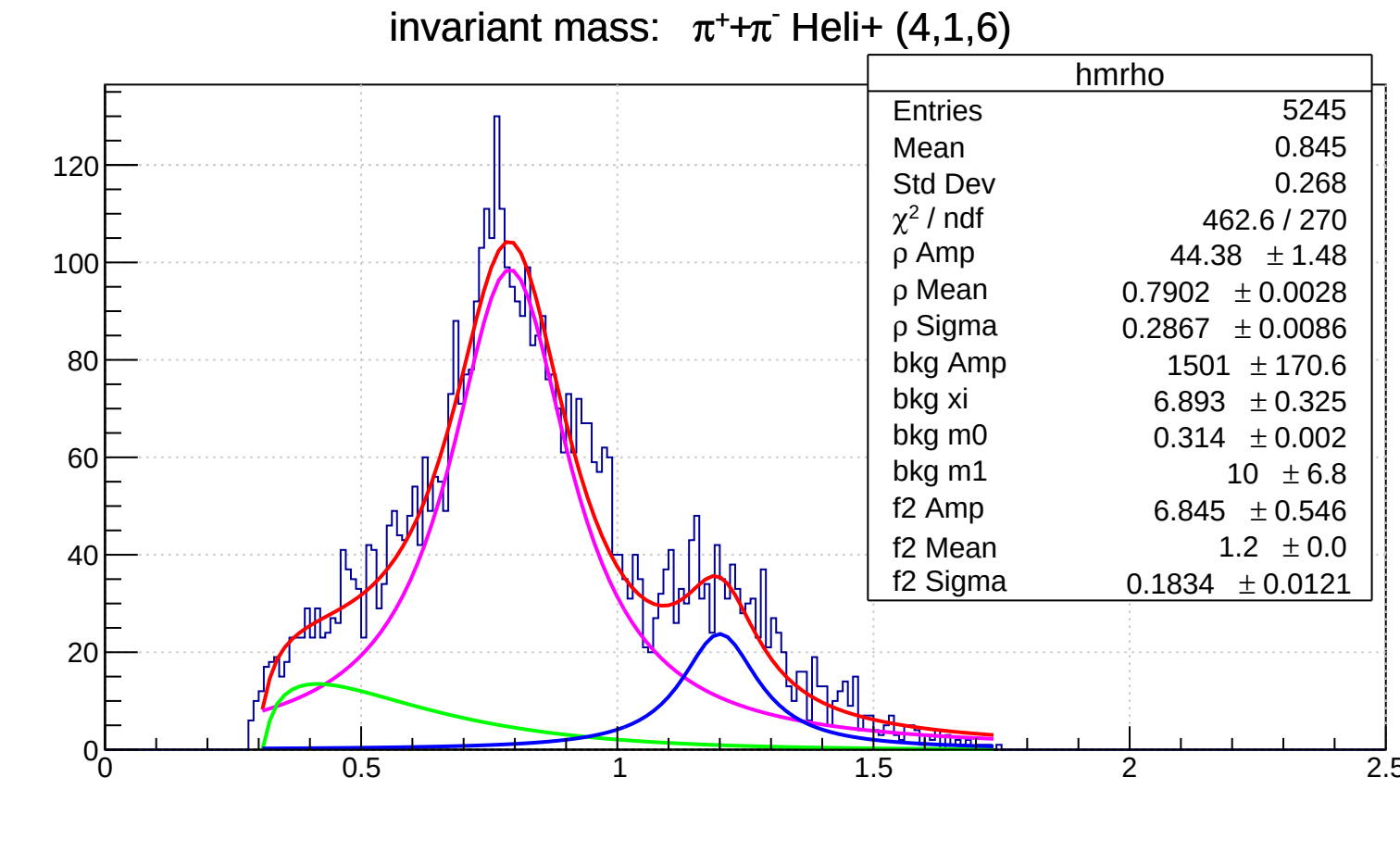
invariant mass: π⁺+π⁻ Heli+ (4,1,6)
hmrho
Entries 5245
Mean 0.845
Std Dev 0.268
χ² / ndf 462.6 / 270
ρ Amp 44.38 ± 1.48
ρ Mean 0.7902 ± 0.0028
ρ Sigma 0.2867 ± 0.0086
bkg Amp 1501 ± 170.6
bkg xi 6.893 ± 0.325
bkg m0 0.314 ± 0.002
bkg m1 10 ± 6.8
f2 Amp 6.845 ± 0.546
f2 Mean 1.2 ± 0.0
f2 Sigma 0.1834 ± 0.0121
0
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100
120
0
0.5
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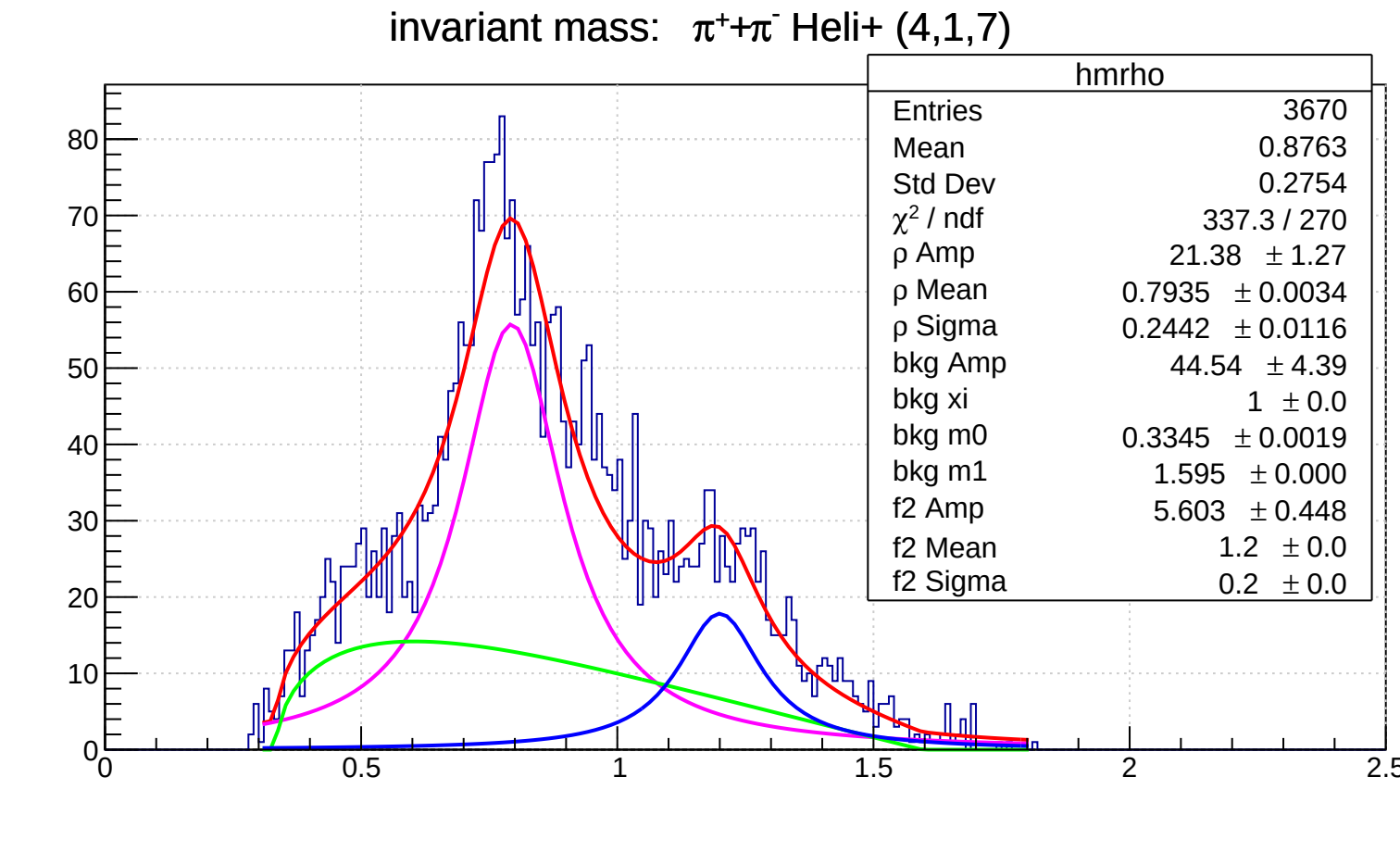
2
2.5


invariant mass: π⁺+π⁻ Heli+ (4,1,7)
hmrho
Entries 3670
Mean 0.8763
Std Dev 0.2754
χ² / ndf 337.3 / 270
ρ Amp 21.38 ± 1.27
ρ Mean 0.7935 ± 0.0034
ρ Sigma 0.2442 ± 0.0116
bkg Amp 44.54 ± 4.39
bkg xi 1 ± 0.0
bkg m0 0.3345 ± 0.0019
bkg m1 1.595 ± 0.000
f2 Amp 5.603 ± 0.448
f2 Mean 1.2 ± 0.0
f2 Sigma 0.2 ± 0.0
0
10
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30
40
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70
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0
0.5
1
1.5
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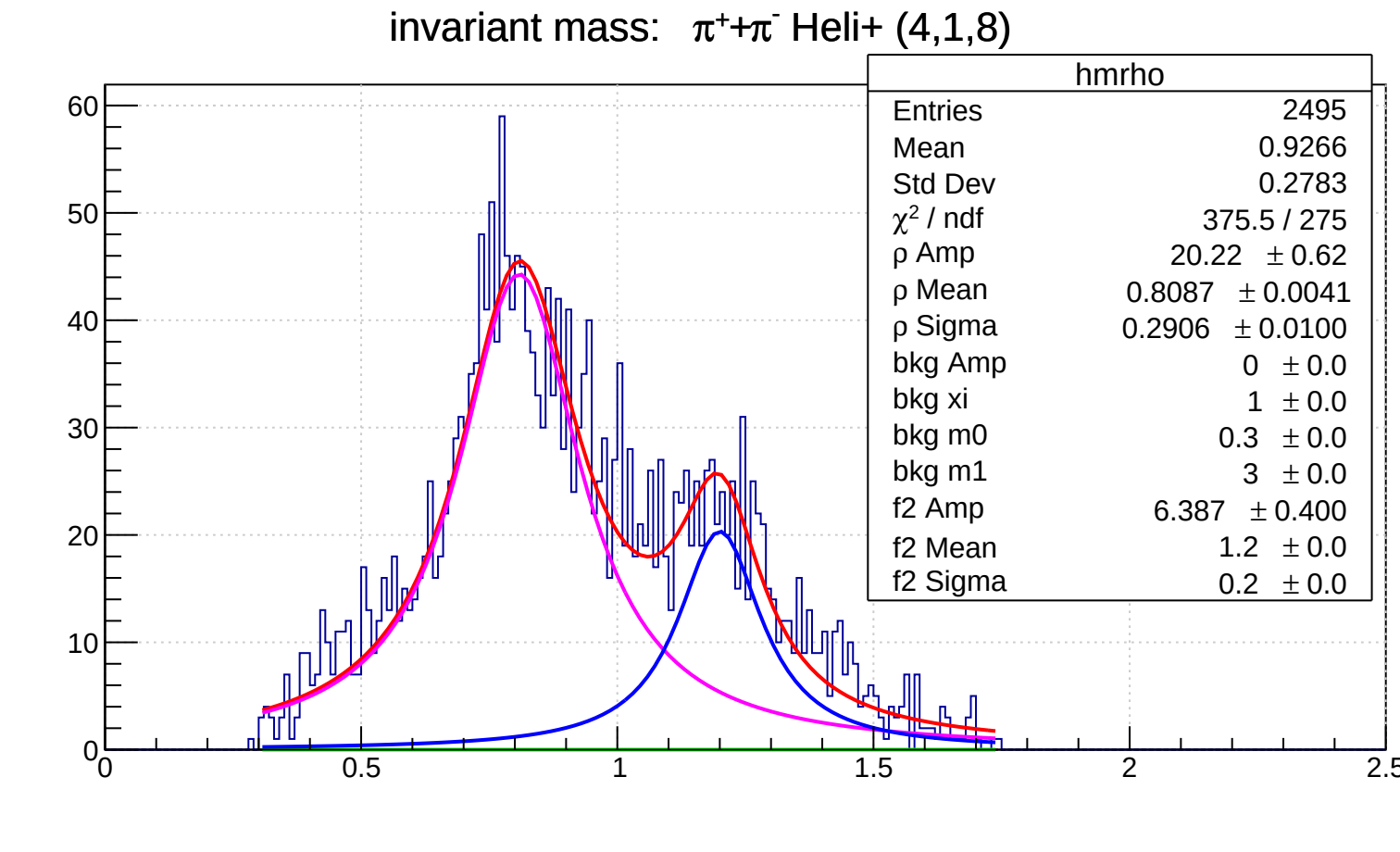
2.5


invariant mass: π⁺+π⁻ Heli+ (4,1,8)
hmrho
Entries 2495
Mean 0.9266
Std Dev 0.2783
χ² / ndf 375.5 / 275
ρ Amp 20.22 ± 0.62
ρ Mean 0.8087 ± 0.0041
ρ Sigma 0.2906 ± 0.0100
bkg Amp 0 ± 0.0
bkg xi 1 ± 0.0
bkg m0 0.3 ± 0.0
bkg m1 3 ± 0.0
f2 Amp 6.387 ± 0.400
f2 Mean 1.2 ± 0.0
f2 Sigma 0.2 ± 0.0
0
10
20
30
40
50
60
0
0.5
1
1.5
2
2.5