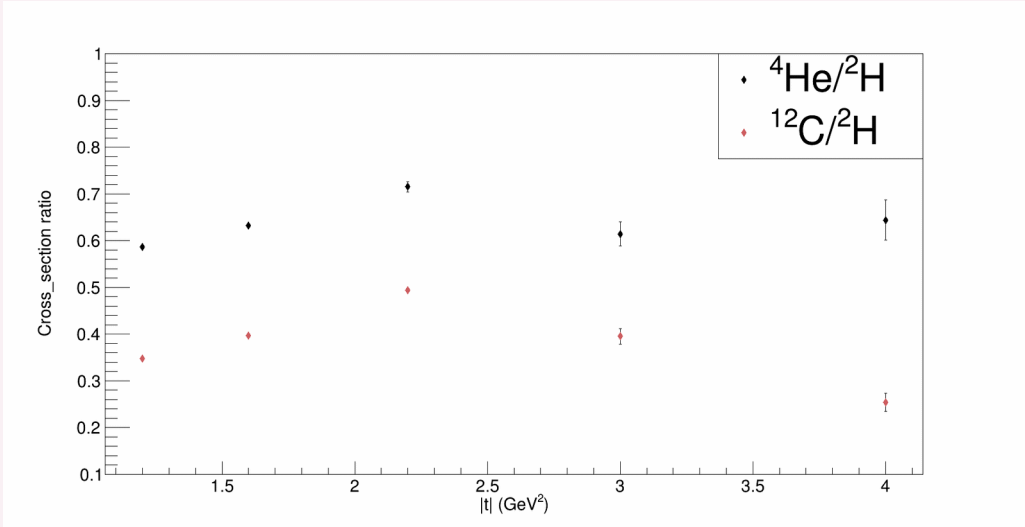
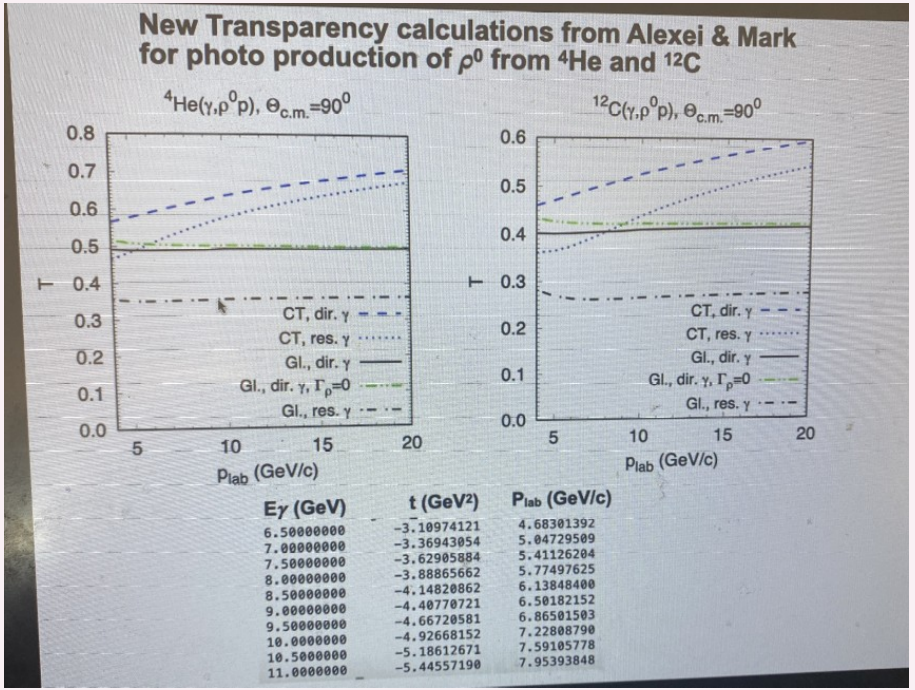
Cross Sectional Ratio for Rho0 meson

Experimental Cross_section ratio as a function of |t|



Theoretical Cross_section ratio as a function of Plab



A) Transparency for Pion photoproduction

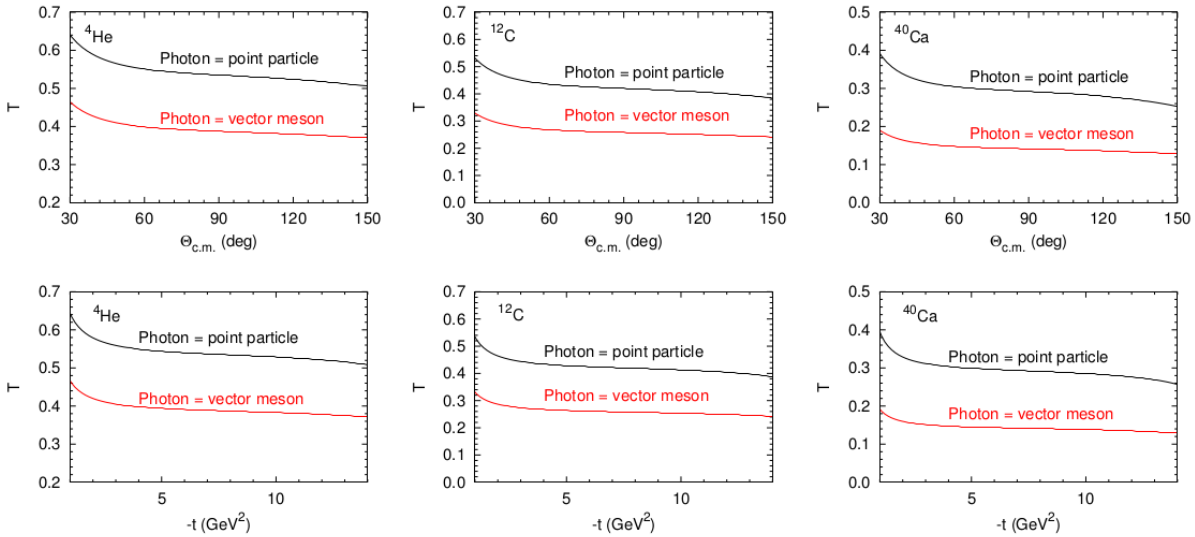


Figure 2: Calculated transparency (ratio of full calculation to plane wave calculation) for pion photoproduction reaction off a neutron ($\gamma n \to \pi^- p$) in ^{4}He (left column), ^{12}C (middle column), and ^{4}0Ca (right column) as a function of the center-of-mass scattering angle (top row) and momentum transfer t (bottom row). The different lines correspond to calculations describing the photon interaction as a superposition of vector mesons (red) and as a point-like particle (black), See Ref. [9] for details.

B) Transparency for Pion photoproduction

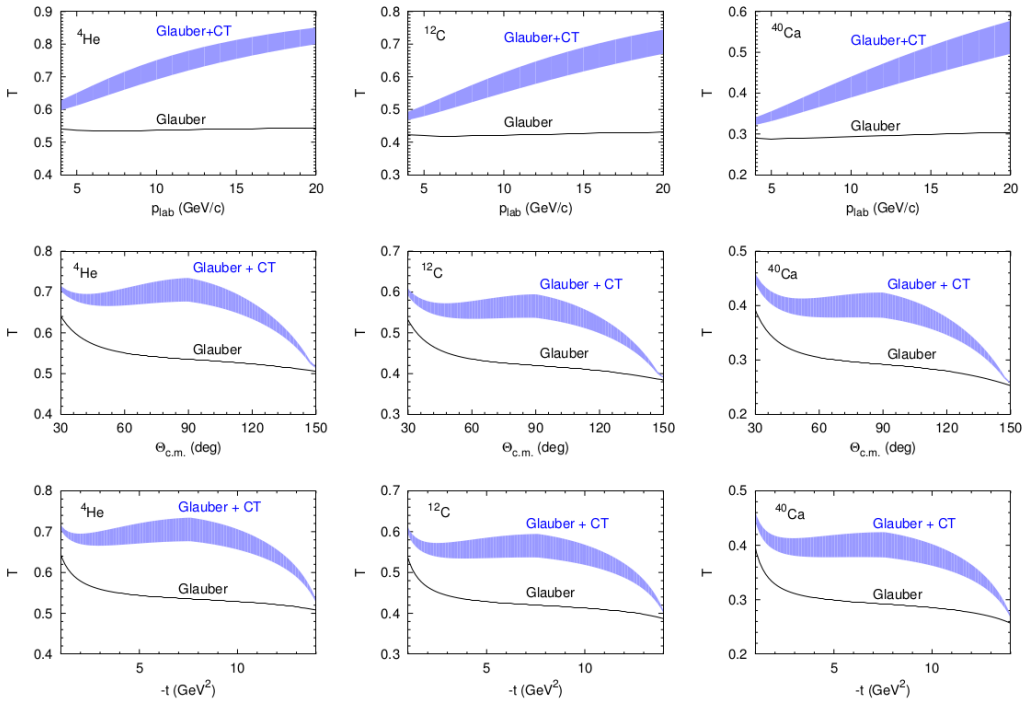
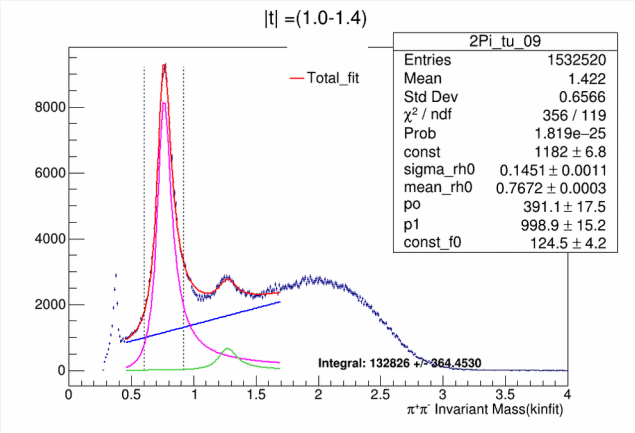


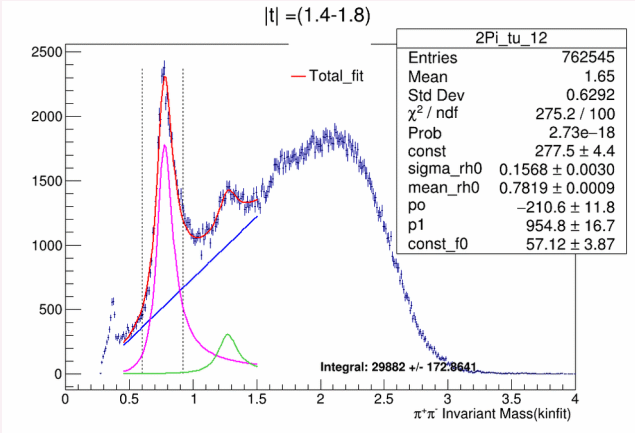
Figure 4: The transparency for the $A(\gamma, \pi^- p)$ reaction for ^{4}He (left column), ^{12}C (middle column), and ^{40}Ca (right column) shown as a function of the photon energy for a 90° c.m. scattering angle (top row), of c.m. scattering angle (middle row), and of momentum transfer (bottom row) for 9 GeV

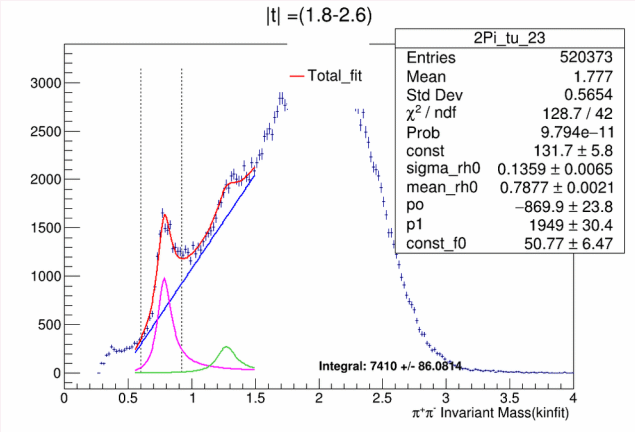
Backup

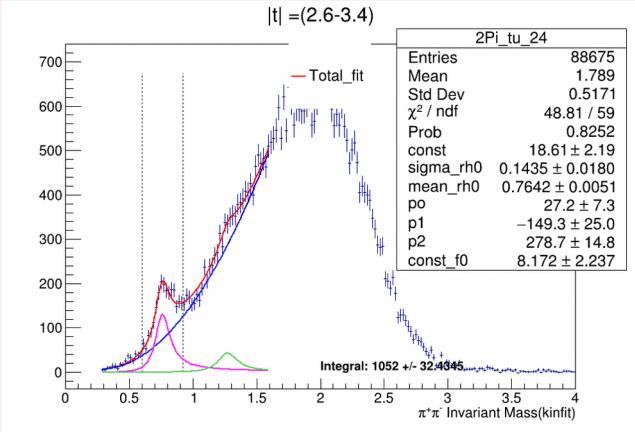
- Backup

Deuterium

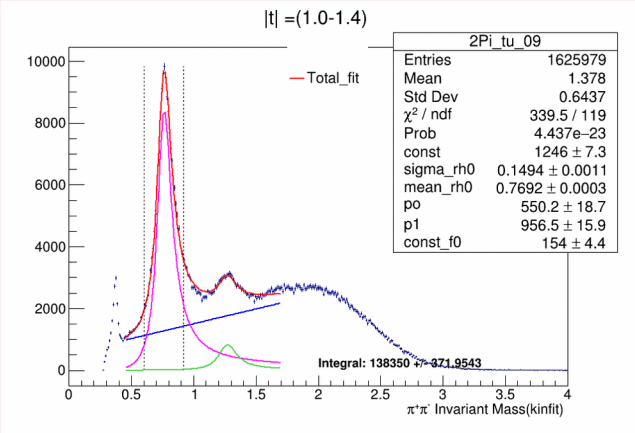

|t| =(1.0-1.4)
Total_fit
2Pi_tu_09
Entries 1532520
Mean 1.422
Std Dev 0.6566
χ² / ndf 356 / 119
Prob 1.819e−25
const 1182 ± 6.8
sigma_rh0 0.1451 ± 0.0011
mean_rh0 0.7672 ± 0.0003
po 391.1 ± 17.5
p1 998.9 ± 15.2
const_f0 124.5 ± 4.2
Integral: 132826 +/- 364.4530
π⁺π⁻ Invariant Mass(kinfit)

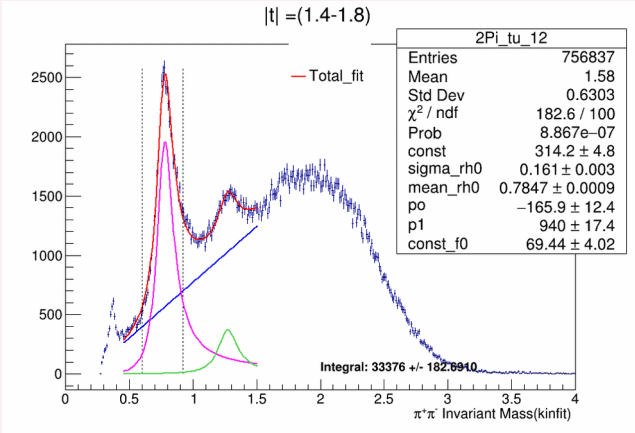

|t| =(1.4-1.8)
Total_fit
2Pi_tu_12
Entries 762545
Mean 1.65
Std Dev 0.6292
χ² / ndf 275.2 / 100
Prob 2.73e−18
const 277.5 ± 4.4
sigma_rh0 0.1568 ± 0.0030
mean_rh0 0.7819 ± 0.0009
po −210.6 ± 11.8
p1 954.8 ± 16.7
const_f0 57.12 ± 3.87
Integral: 29882 +/- 172.8641
π⁺π⁻ Invariant Mass(kinfit)

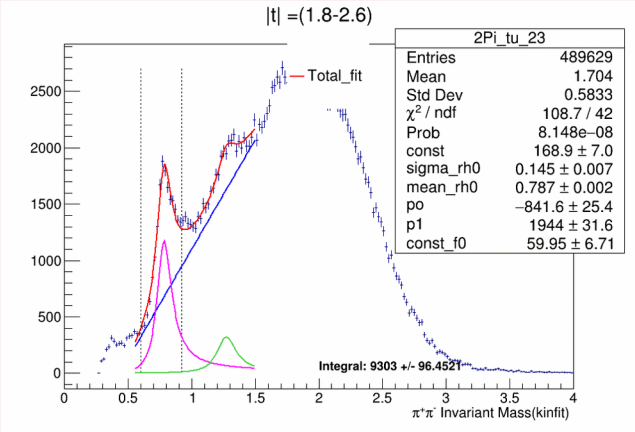

|t| =(1.8-2.6)
Total_fit
2Pi_tu_23
Entries 520373
Mean 1.777
Std Dev 0.5654
χ² / ndf 128.7 / 42
Prob 9.794e−11
const 131.7 ± 5.8
sigma_rh0 0.1359 ± 0.0065
mean_rh0 0.7877 ± 0.0021
po −869.9 ± 23.8
p1 1949 ± 30.4
const_f0 50.77 ± 6.47
Integral: 7410 +/- 86.0814
π⁺π⁻ Invariant Mass(kinfit)

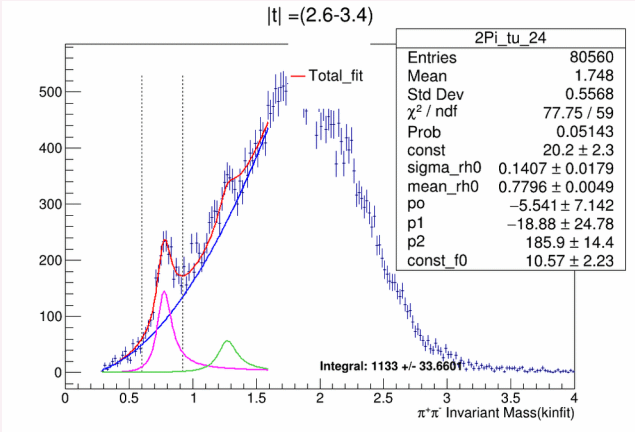

|t| =(2.6-3.4)
Total_fit
2Pi_tu_24
Entries 88675
Mean 1.789
Std Dev 0.5171
χ² / ndf 48.81 / 59
Prob 0.8252
const 18.61 ± 2.19
sigma_rh0 0.1435 ± 0.0180
mean_rh0 0.7642 ± 0.0051
po 27.2 ± 7.3
p1 −149.3 ± 25.0
p2 278.7 ± 14.8
const_f0 8.172 ± 2.237
Integral: 1052 +/- 32.4345
π⁺π⁻ Invariant Mass(kinfit)

Helium

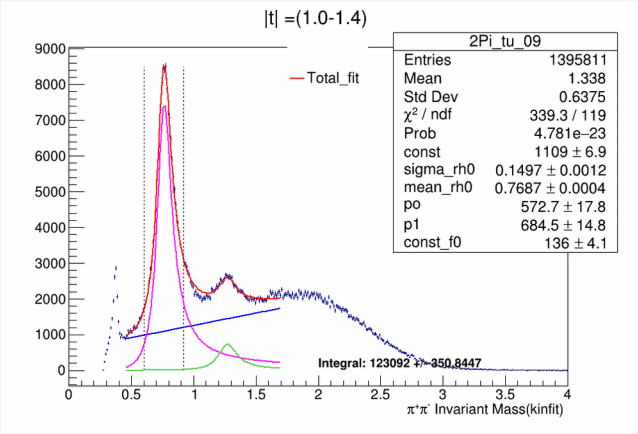

|t| =(1.0-1.4)
Total_fit
2Pi_tu_09
Entries 1625979
Mean 1.378
Std Dev 0.6437
χ² / ndf 339.5 / 119
Prob 4.437e−23
const 1246 ± 7.3
sigma_rh0 0.1494 ± 0.0011
mean_rh0 0.7692 ± 0.0003
po 550.2 ± 18.7
p1 956.5 ± 15.9
const_f0 154 ± 4.4
Integral: 138350 +/- 371.9543
π⁺π⁻ Invariant Mass(kinfit)

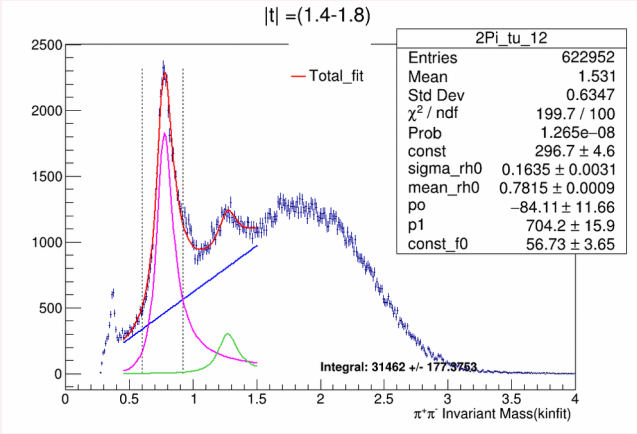

|t| =(1.4-1.8)
Total_fit
2Pi_tu_12
Entries 756837
Mean 1.58
Std Dev 0.6303
χ² / ndf 182.6 / 100
Prob 8.867e−07
const 314.2 ± 4.8
sigma_rh0 0.161 ± 0.003
mean_rh0 0.7847 ± 0.0009
po −165.9 ± 12.4
p1 940 ± 17.4
const_f0 69.44 ± 4.02
Integral: 33376 +/- 182.6910
π⁺π⁻ Invariant Mass(kinfit)

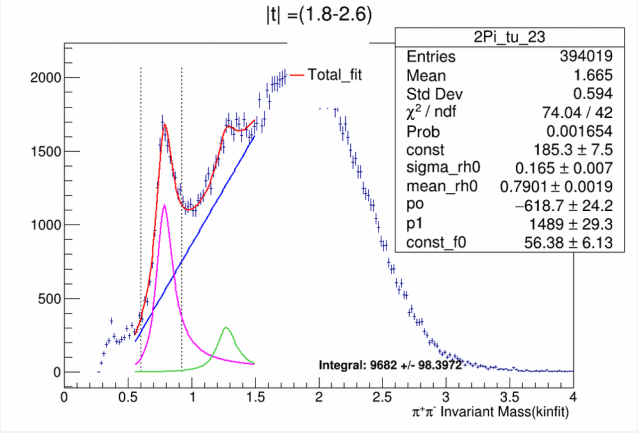

|t| =(1.8-2.6)
Total_fit
2Pi_tu_23
Entries 489629
Mean 1.704
Std Dev 0.5833
χ² / ndf 108.7 / 42
Prob 8.148e−08
const 168.9 ± 7.0
sigma_rh0 0.145 ± 0.007
mean_rh0 0.787 ± 0.002
po −841.6 ± 25.4
p1 1944 ± 31.6
const_f0 59.95 ± 6.71
Integral: 9303 +/- 96.4521
π⁺π⁻ Invariant Mass(kinfit)

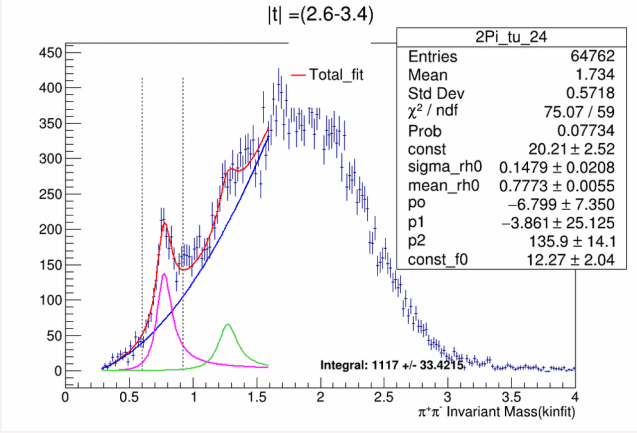

|t| =(2.6-3.4)
Total_fit
2Pi_tu_24
Entries 80560
Mean 1.748
Std Dev 0.5568
χ² / ndf 77.75 / 59
Prob 0.05143
const 20.2 ± 2.3
sigma_rh0 0.1407 ± 0.0179
mean_rh0 0.7796 ± 0.0049
po −5.541 ± 7.142
p1 −18.88 ± 24.78
p2 185.9 ± 14.4
const_f0 10.57 ± 2.23
Integral: 1133 +/- 33.6601
π⁺π⁻ Invariant Mass(kinfit)

Carbon


|t| =(1.0-1.4)
Total_fit
2Pi_tu_09
Entries 1395811
Mean 1.338
Std Dev 0.6375
χ² / ndf 339.3 / 119
Prob 4.781e−23
const 1109 ± 6.9
sigma_rh0 0.1497 ± 0.0012
mean_rh0 0.7687 ± 0.0004
po 572.7 ± 17.8
p1 684.5 ± 14.8
const_f0 136 ± 4.1
Integral: 123092 +/- 350.8447
π⁺π⁻ Invariant Mass(kinfit)


|t| =(1.4-1.8)
Total_fit
2Pi_tu_12
Entries 622952
Mean 1.531
Std Dev 0.6347
χ² / ndf 199.7 / 100
Prob 1.265e−08
const 296.7 ± 4.6
sigma_rh0 0.1635 ± 0.0031
mean_rh0 0.7815 ± 0.0009
po −84.11 ± 11.66
p1 704.2 ± 15.9
const_f0 56.73 ± 3.65
Integral: 31462 +/- 177.3753
π⁺π⁻ Invariant Mass(kinfit)


|t| =(1.8-2.6)
Total_fit
2Pi_tu_23
Entries 394019
Mean 1.665
Std Dev 0.594
χ² / ndf 74.04 / 42
Prob 0.001654
const 185.3 ± 7.5
sigma_rh0 0.165 ± 0.007
mean_rh0 0.7901 ± 0.0019
po −618.7 ± 24.2
p1 1489 ± 29.3
const_f0 56.38 ± 6.13
Integral: 9682 +/- 98.3972
π⁺π⁻ Invariant Mass(kinfit)


|t| =(2.6-3.4)
Total_fit
2Pi_tu_24
Entries 64762
Mean 1.734
Std Dev 0.5718
χ² / ndf 75.07 / 59
Prob 0.07734
const 20.21 ± 2.52
sigma_rh0 0.1479 ± 0.0208
mean_rh0 0.7773 ± 0.0055
po −6.799 ± 7.350
p1 −3.861 ± 25.125
p2 135.9 ± 14.1
const_f0 12.27 ± 2.04
Integral: 1117 +/- 33.4215
π⁺π⁻ Invariant Mass(kinfit)