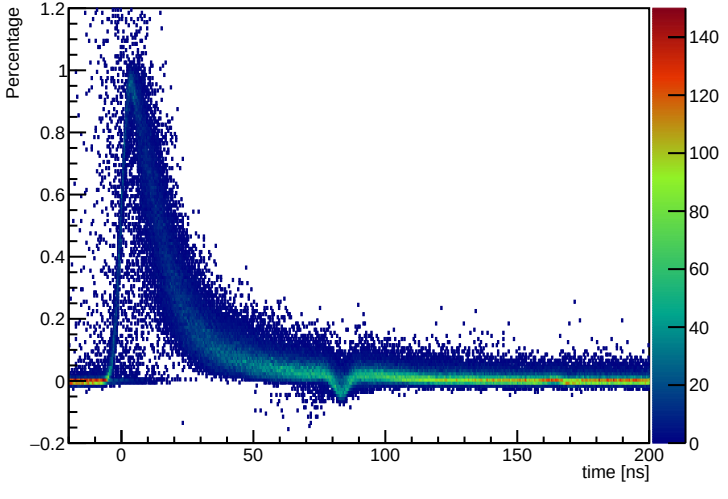
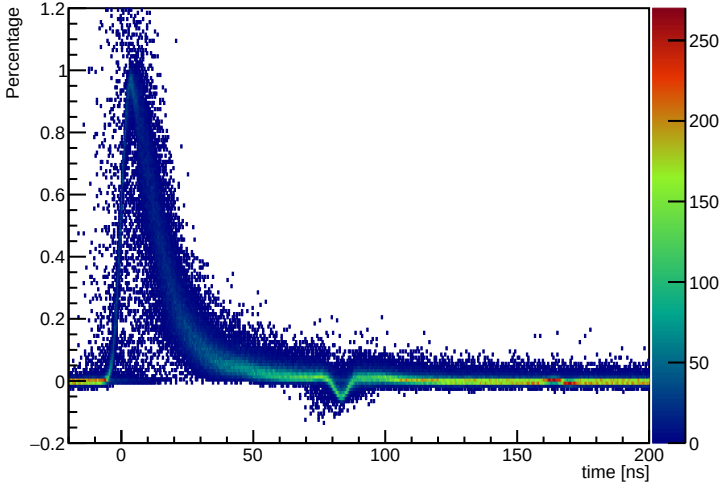
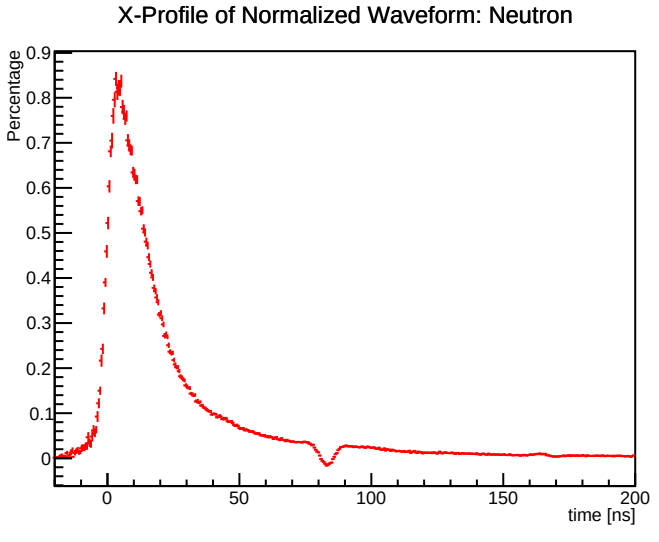
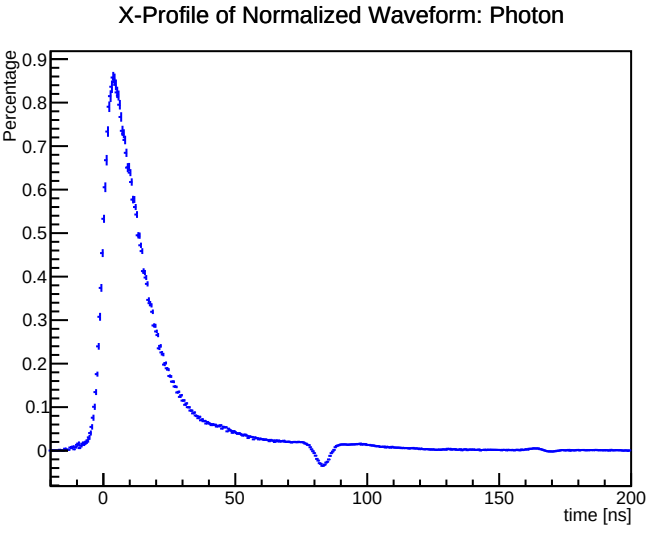
Normalized Waveform: Neutron

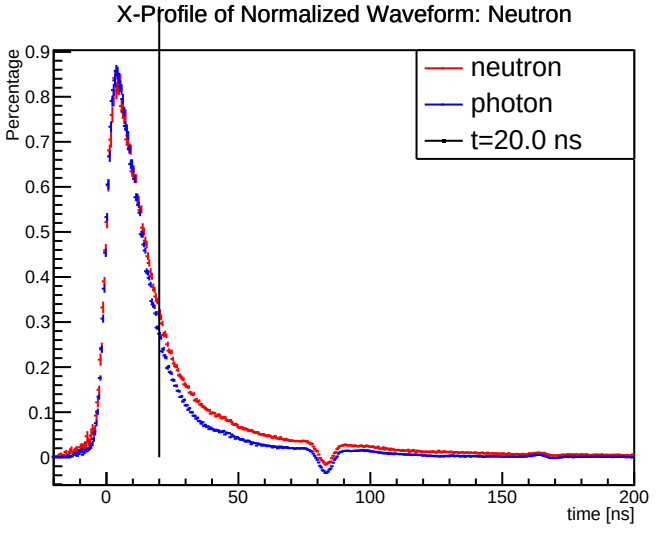


Normalized Waveform: Photon




X-Profile of Normalized Waveform: Neutron
Percentage
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
50
100
150
200
time [ns]


X-Profile of Normalized Waveform: Photon
Percentage
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
50
100
150
200
time [ns]



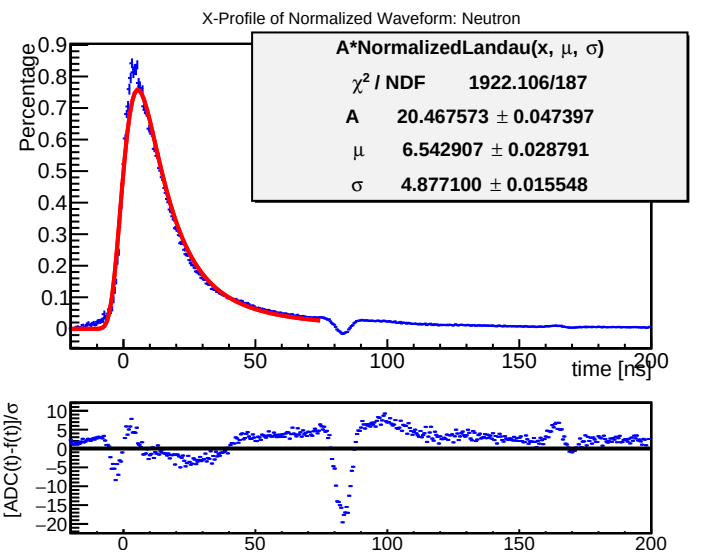
Tail is defined as the part of the waveform to the right of t=20.0 ns

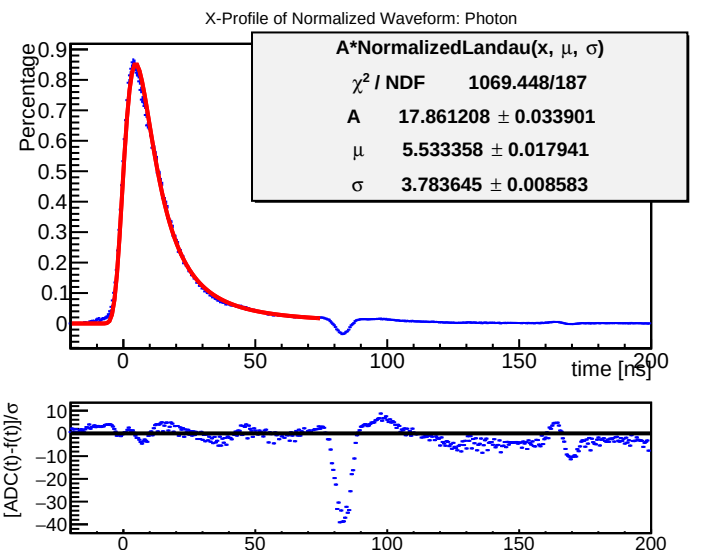
Defining the Tail Area Ratio Q

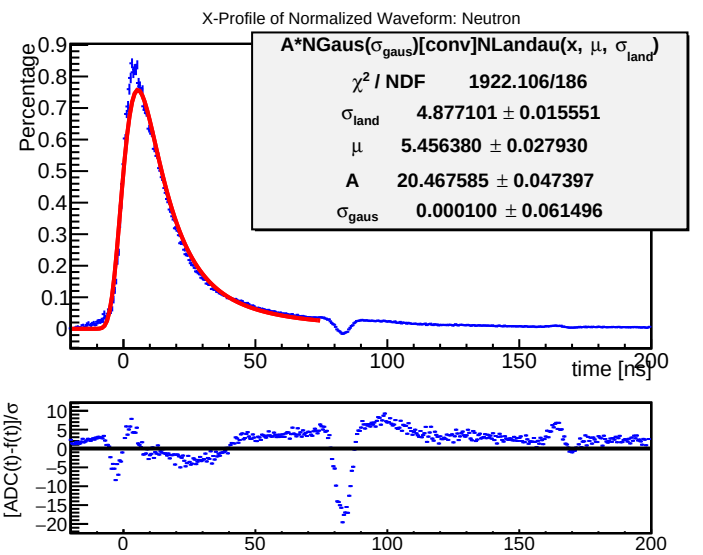
$$Q = \frac{\text{Area under the tail}}{\text{Total area under the waveform}}$$

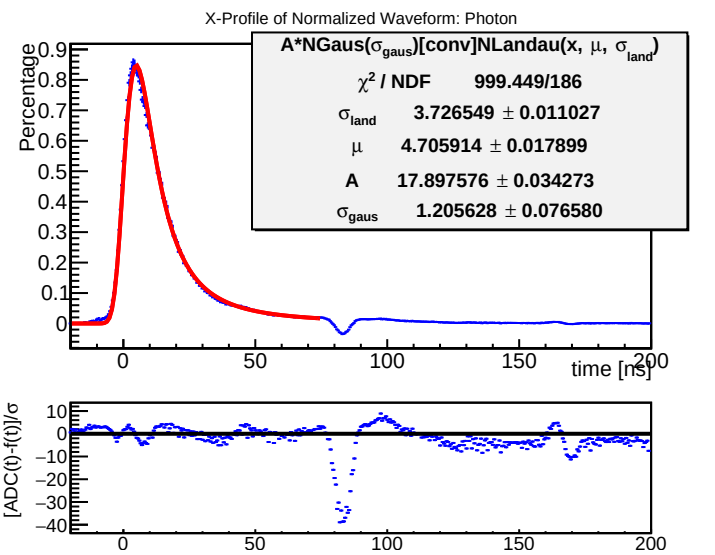
For the averaged photon waveform, Q=0.247723

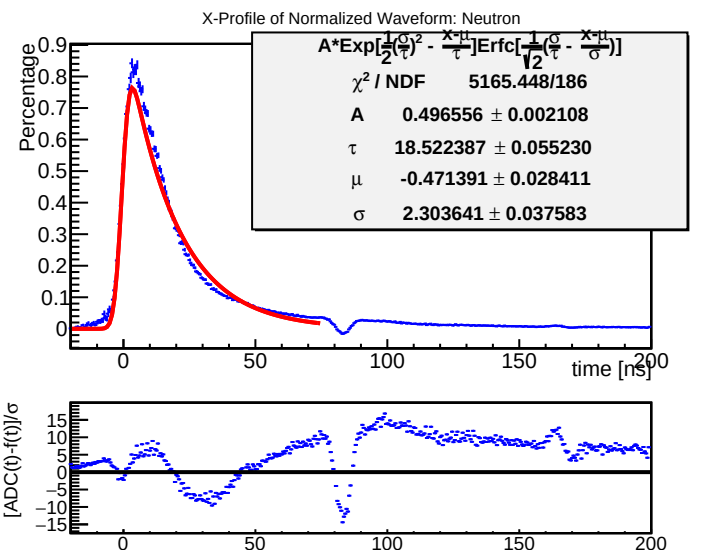
For the averaged neutron waveform, Q=0.342912

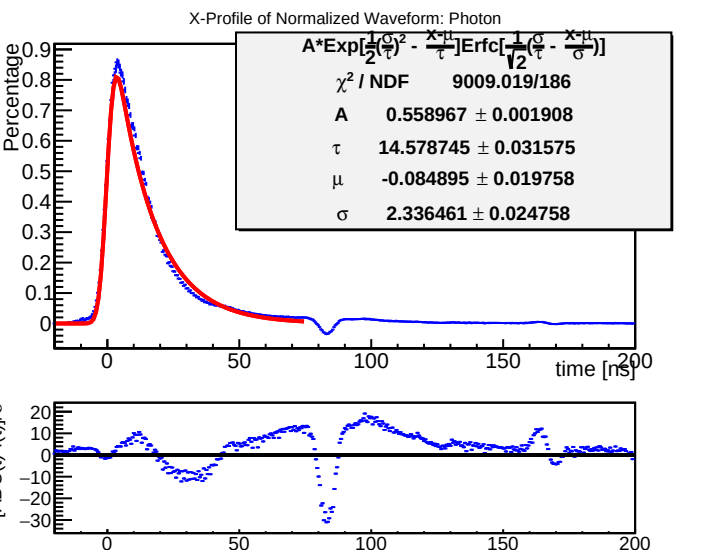

X-Profile of Normalized Waveform: Neutron
A*NormalizedLandau(x, μ, σ)
χ² / NDF 1922.106/187
A 20.467573 ± 0.047397
μ 6.542907 ± 0.028791
σ 4.877100 ± 0.015548
Percentage
time [ns]
[ADC(t)-f(t)]/σ

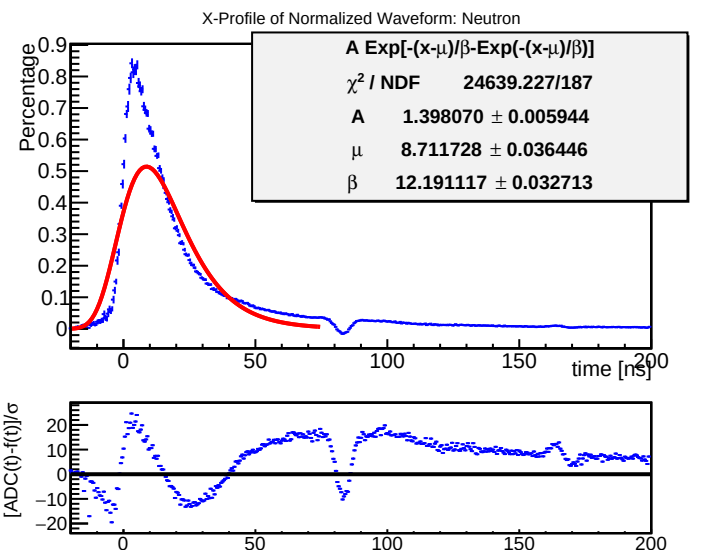

X-Profile of Normalized Waveform: Photon
A*NormalizedLandau(x, μ, σ)
χ² / NDF 1069.448/187
A 17.861208 ± 0.033901
μ 5.533358 ± 0.017941
σ 3.783645 ± 0.008583
Percentage
time [ns]
[ADC(t)-f(t)]/σ

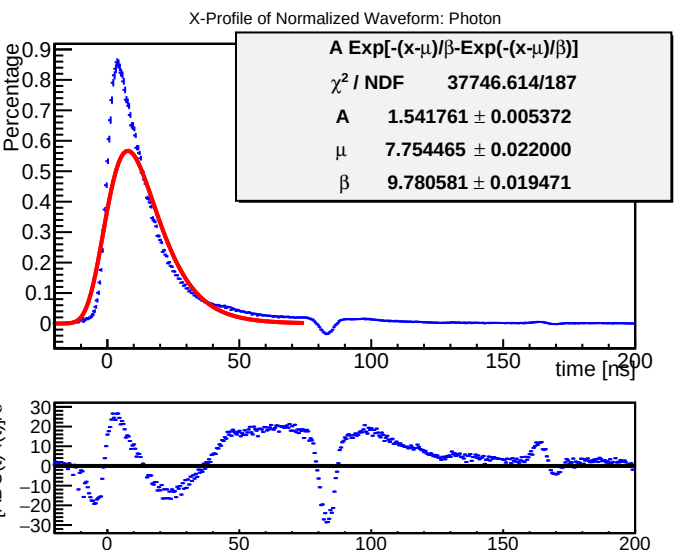

X-Profile of Normalized Waveform: Neutron
A*NGaus(σgaus)[conv]NLandau(x, μ, σland)
χ² / NDF 1922.106/186
σland 4.877101 ± 0.015551
μ 5.456380 ± 0.027930
A 20.467585 ± 0.047397
σgaus 0.000100 ± 0.061496
Percentage
time [ns]
[ADC(t)-f(t)]/σ

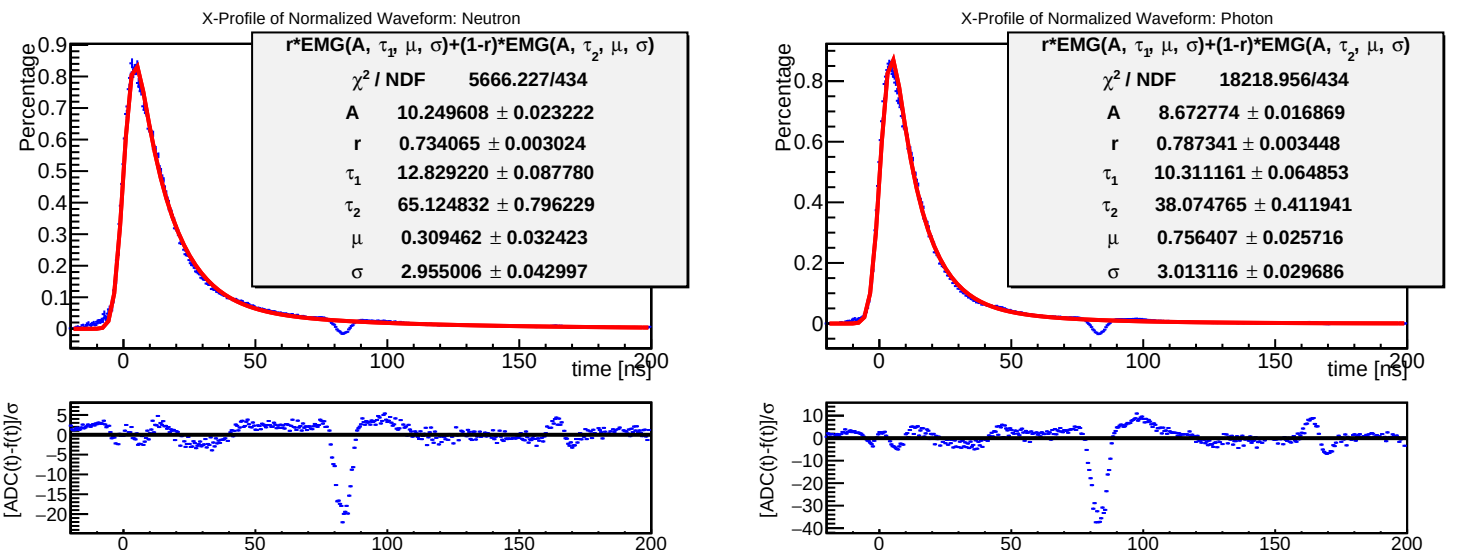

X-Profile of Normalized Waveform: Photon
A*NGaus(σgaus)[conv]NLandau(x, μ, σland)
χ² / NDF 999.449/186
σland 3.726549 ± 0.011027
μ 4.705914 ± 0.017899
A 17.897576 ± 0.034273
σgaus 1.205628 ± 0.076580
Percentage
time [ns]
[ADC(t)-f(t)]/σ


X-Profile of Normalized Waveform: Neutron
A*Exp[1/2(σ/τ)² - (x-μ)/τ]Erfc[1/√2(σ/τ - (x-μ)/σ)]
χ² / NDF 5165.448/186
A 0.496556 ± 0.002108
τ 18.522387 ± 0.055230
μ -0.471391 ± 0.028411
σ 2.303641 ± 0.037583
Percentage
time [ns]
[ADC(t)-f(t)]/σ


X-Profile of Normalized Waveform: Photon
A*Exp[1/2(σ/τ)² - (x-μ)/τ]Erfc[1/√2(σ/τ - (x-μ)/σ)]
χ² / NDF 9009.019/186
A 0.558967 ± 0.001908
τ 14.578745 ± 0.031575
μ -0.084895 ± 0.019758
σ 2.336461 ± 0.024758
Percentage
time [ns]
[ADC(t)-f(t)]/σ


X-Profile of Normalized Waveform: Neutron
A Exp[-(x-μ)/β-Exp(-(x-μ)/β)]
χ² / NDF 24639.227/187
A 1.398070 ± 0.005944
μ 8.711728 ± 0.036446
β 12.191117 ± 0.032713
Percentage
time [ns]
[ADC(t)-f(t)]/σ


X-Profile of Normalized Waveform: Photon
A Exp[-(x-μ)/β-Exp(-(x-μ)/β)]
χ² / NDF 37746.614/187
A 1.541761 ± 0.005372
μ 7.754465 ± 0.022000
β 9.780581 ± 0.019471
Percentage
time [ns]
[ADC(t)-f(t)]/σ


X-Profile of Normalized Waveform: Neutron
r*EMG(A, τ1, μ, σ)+(1-r)*EMG(A, τ2, μ, σ)
χ² / NDF 5666.227/434
A 10.249608 ± 0.023222
r 0.734065 ± 0.003024
τ1 12.829220 ± 0.087780
τ2 65.124832 ± 0.796229
μ 0.309462 ± 0.032423
σ 2.955006 ± 0.042997
Percentage
time [ns]
[ADC(t)-f(t)]/σ
X-Profile of Normalized Waveform: Photon
r*EMG(A, τ1, μ, σ)+(1-r)*EMG(A, τ2, μ, σ)
χ² / NDF 18218.956/434
A 8.672774 ± 0.016869
r 0.787341 ± 0.003448
τ1 10.311161 ± 0.064853
τ2 38.074765 ± 0.411941
μ 0.756407 ± 0.025716
σ 3.013116 ± 0.029686
Percentage
time [ns]
[ADC(t)-f(t)]/σ