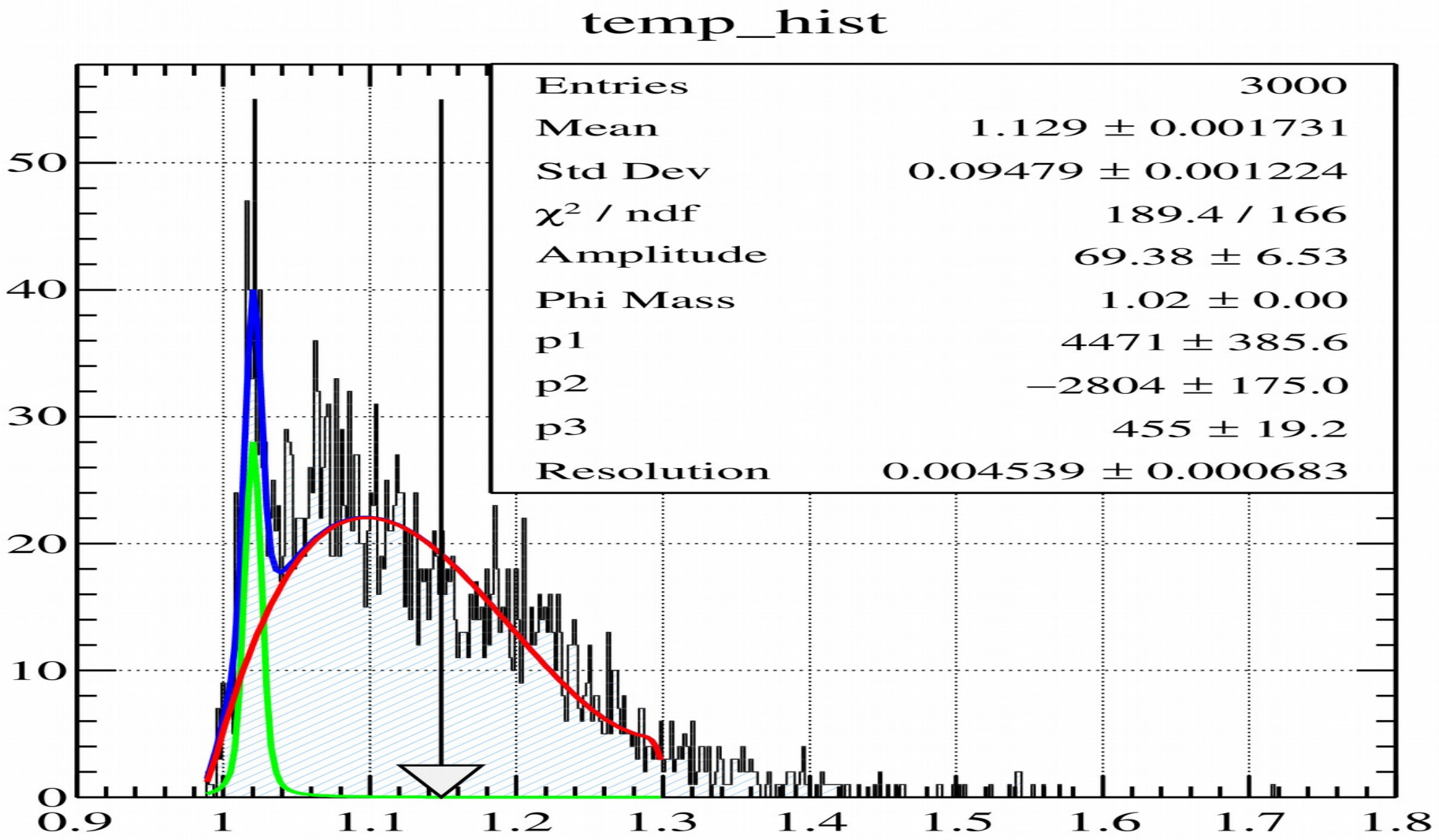
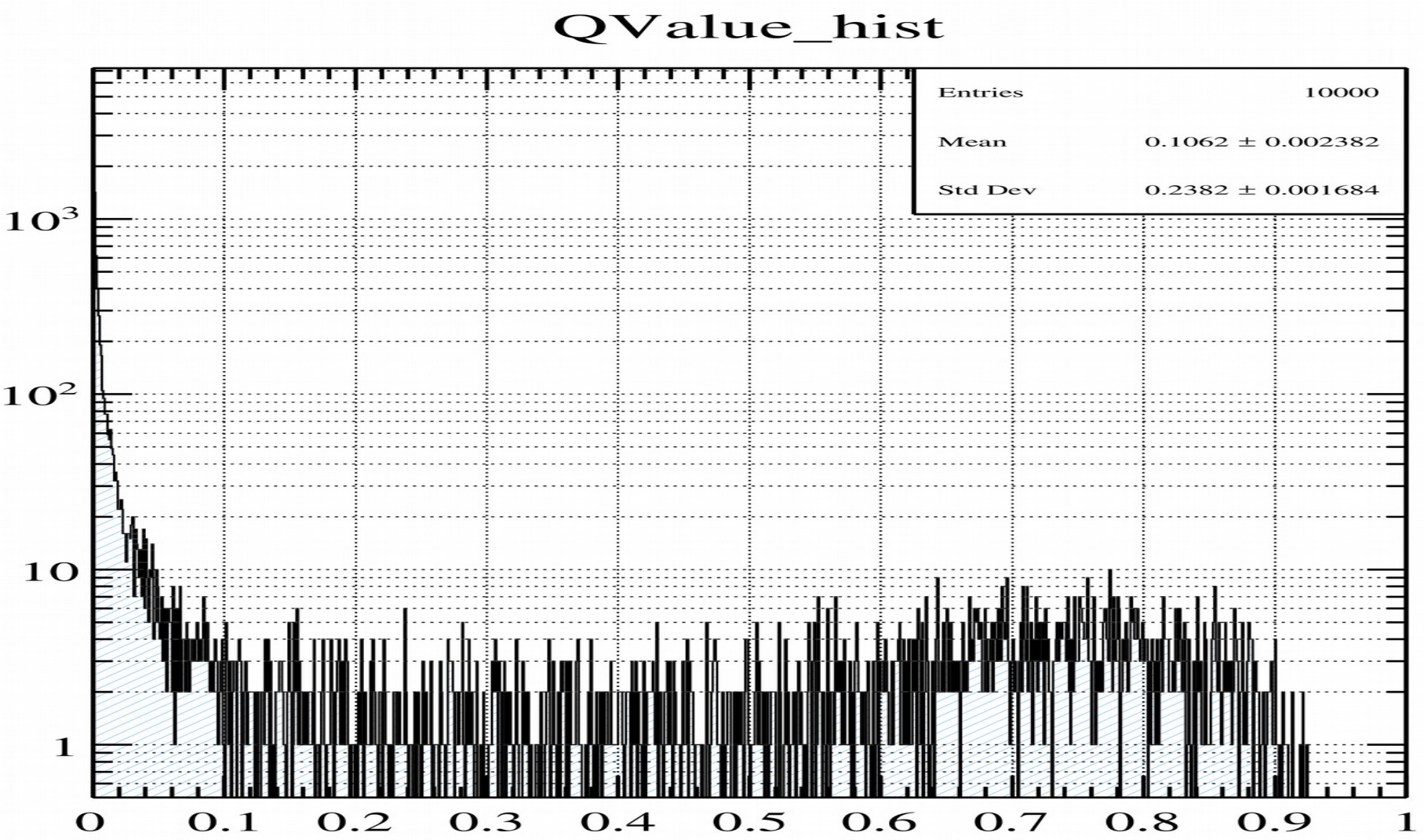
List of things this talk will discuss:

- Testing the ‘cusp’ effect seen in the background histogram for the K+K- invariant mass using:
  - Fixed BG polynomial value at K+K- threshold
  - Fixed Phi width
  - Free Phi mass
  - Free Resolution
  - 3 out of 4 background parameters are free
- Background function: 3rd degree Chebyshev polynomial convoluted with a Gaussian
- Signal function: Relativistic Breit-Wigner convoluted with a Gaussian
- (B.W. + Poly)*Gaus as opposed to:
  - B.W.*Gaus + Poly

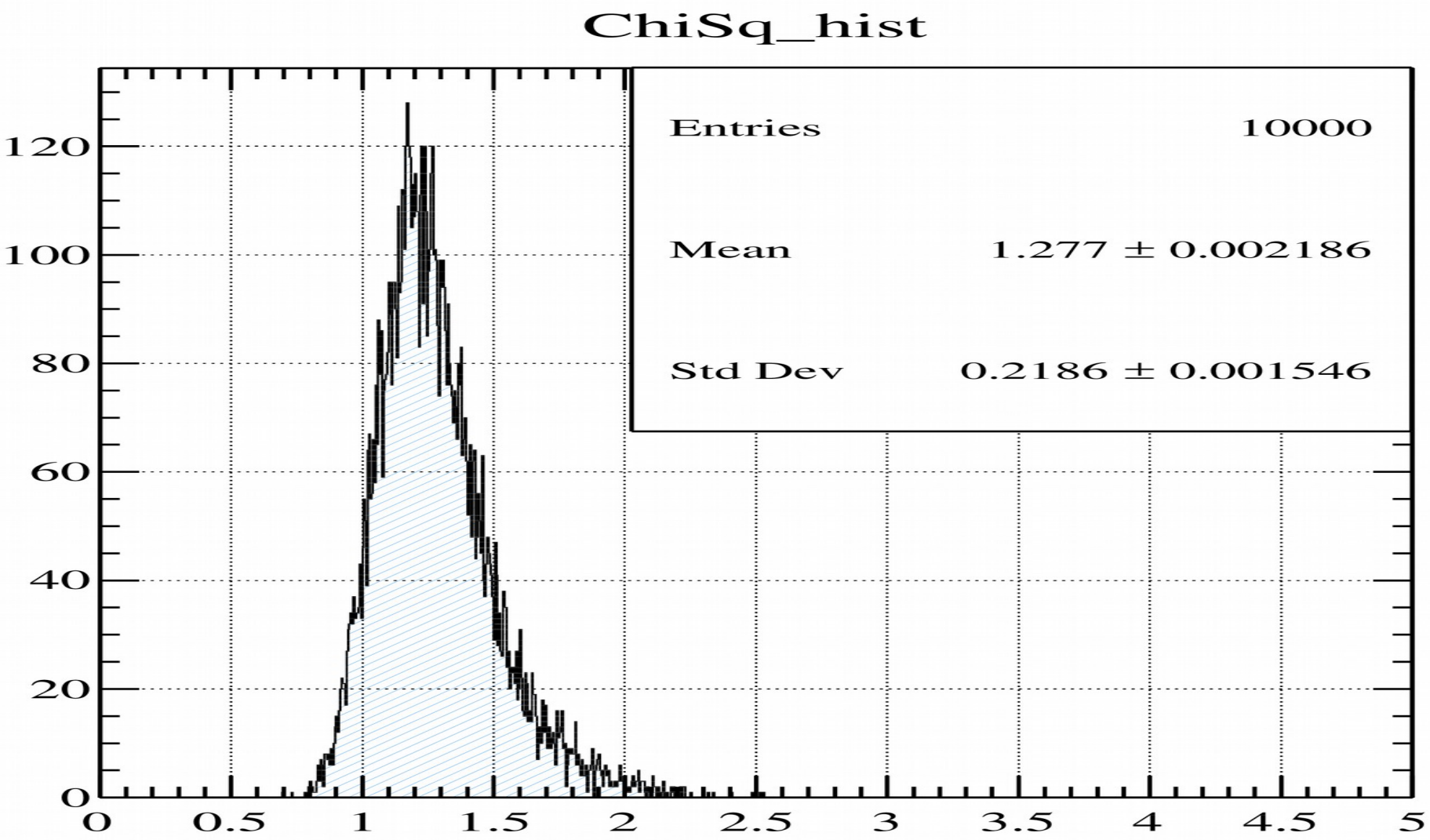
Event #4 – Example Fit, ChiSq = 1.13



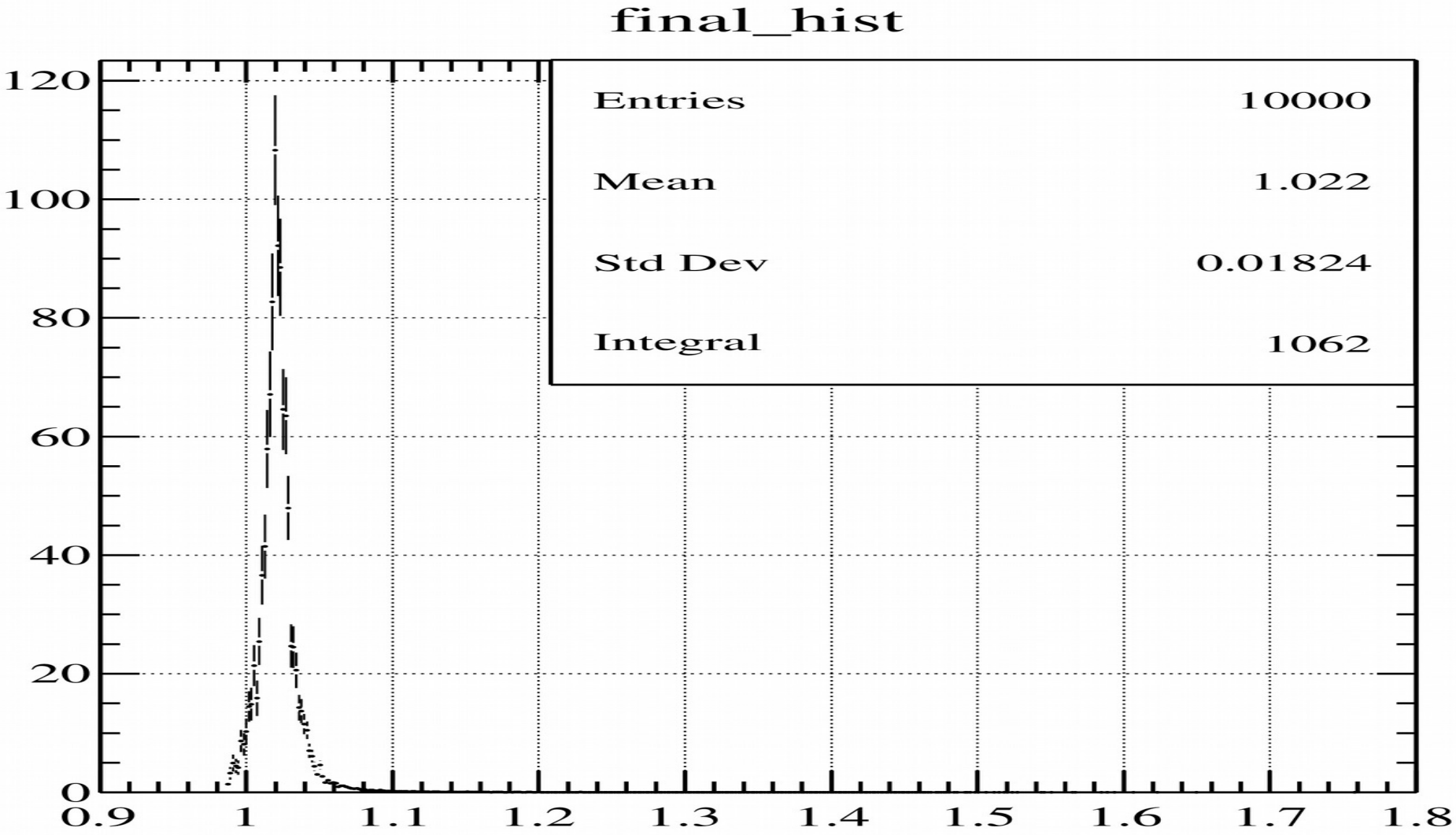
QValue


QValue_hist
Entries 10000
Mean 0.1062 ± 0.002382
Std Dev 0.2382 ± 0.001684
10³
10²
10
1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1

Chi^2/NDF

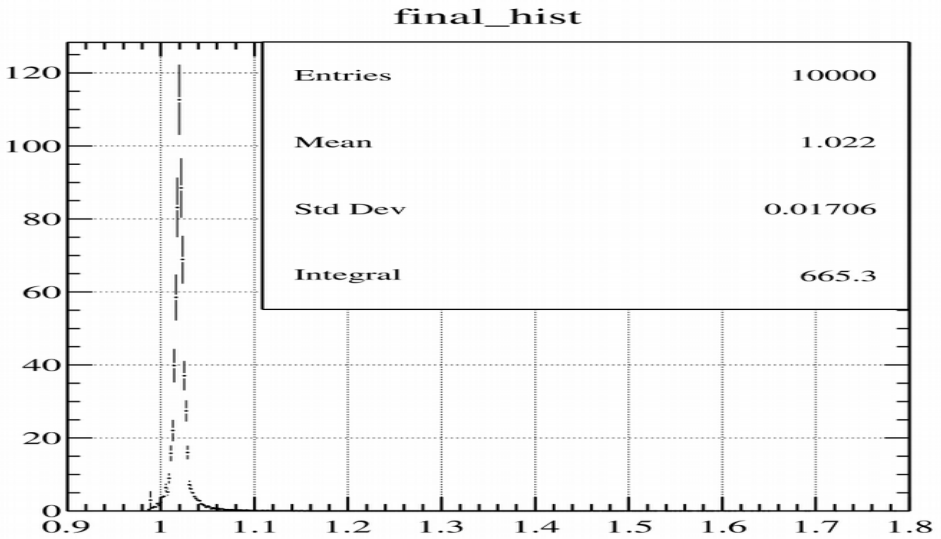

ChiSq_hist
Entries 10000
Mean 1.277 ± 0.002186
Std Dev 0.2186 ± 0.001546
120
100
80
60
40
20
0
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5

Signal Events

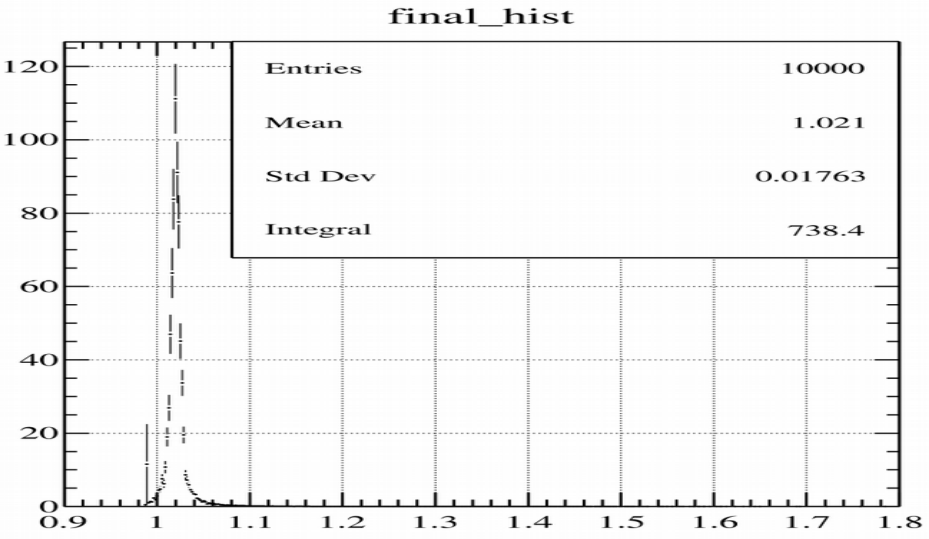


Signal Events

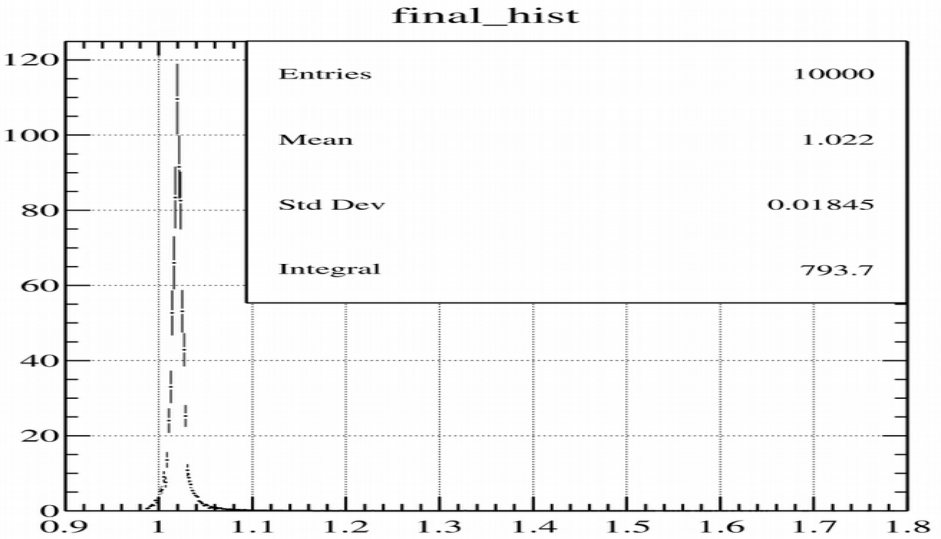
Sigma = 0.001



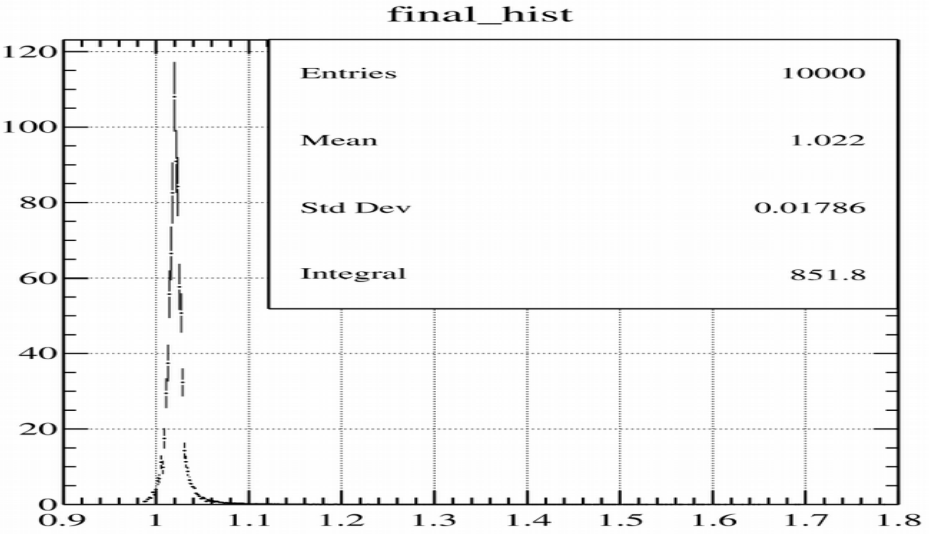
Sigma = 0.002



Sigma = 0.003

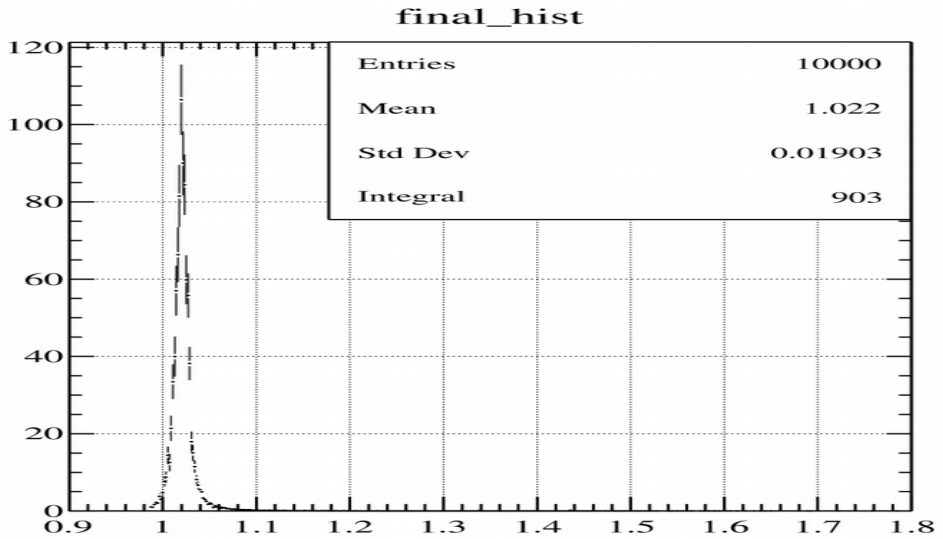


Sigma = 0.004

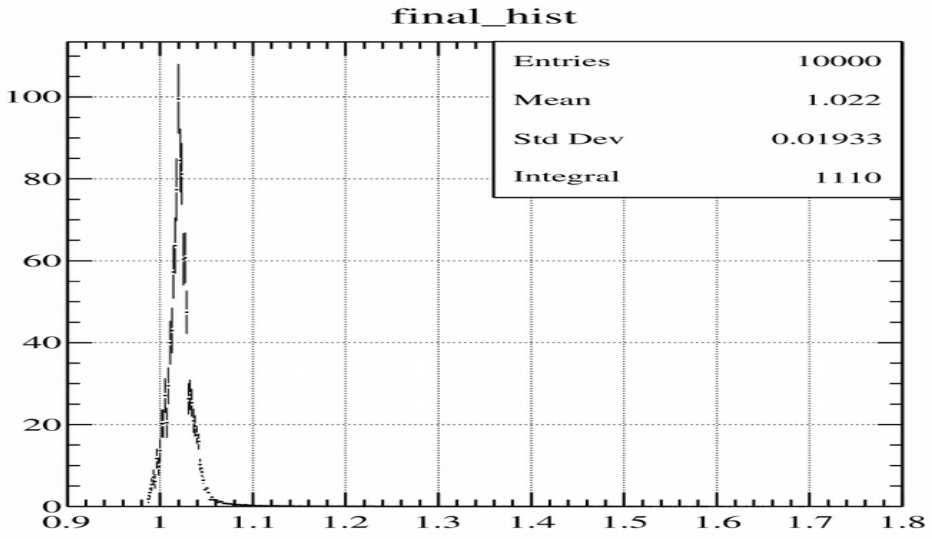


Signal Events

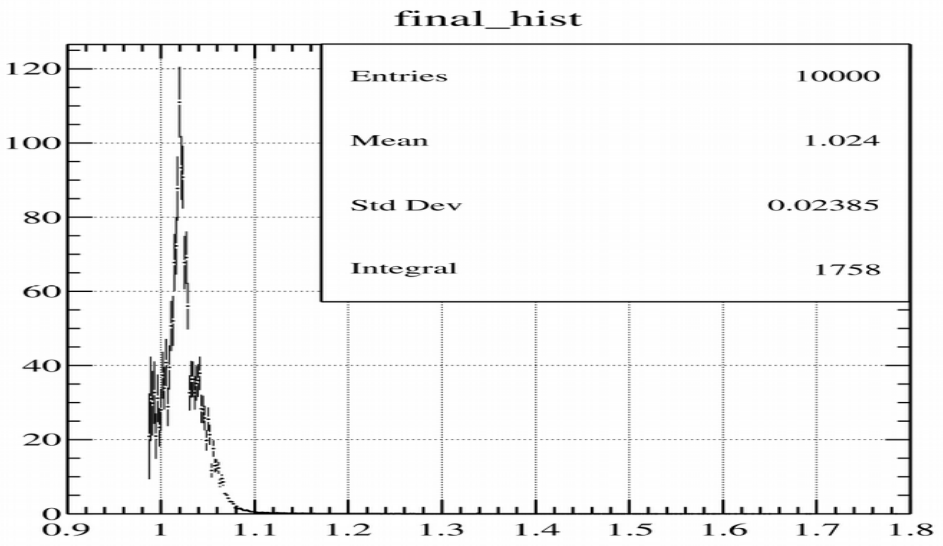
Sigma = 0.005



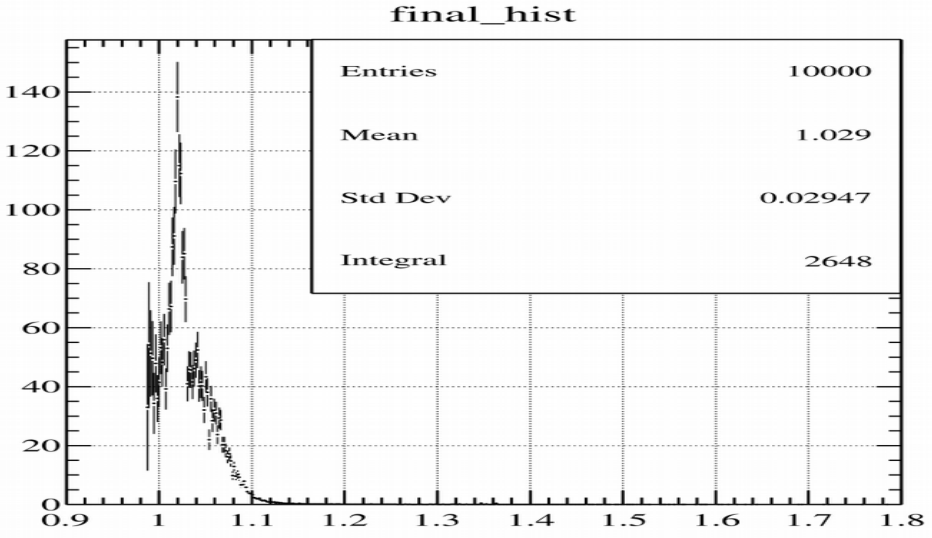
Sigma = 0.01



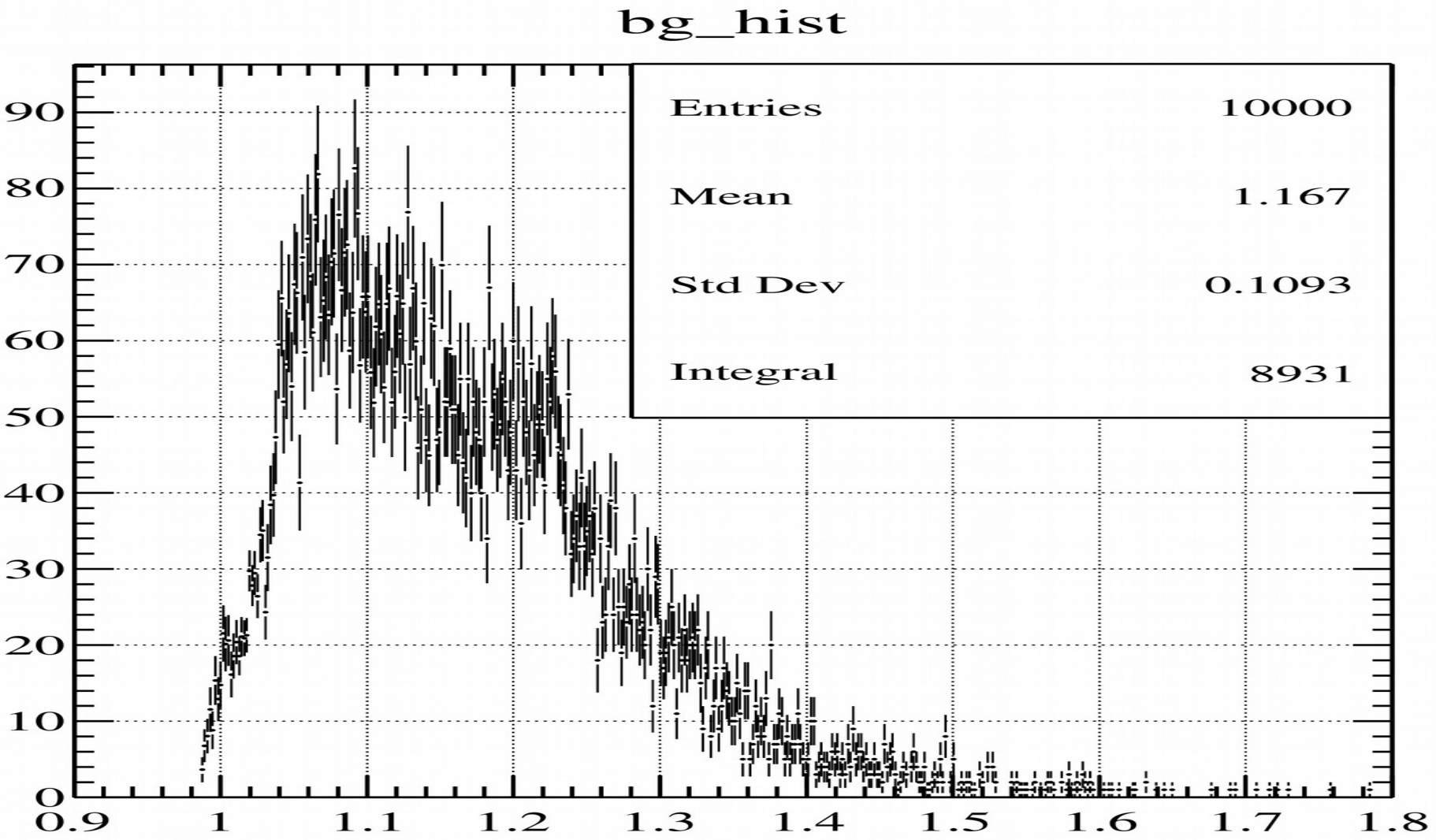
Sigma = 0.02



Sigma = 0.03

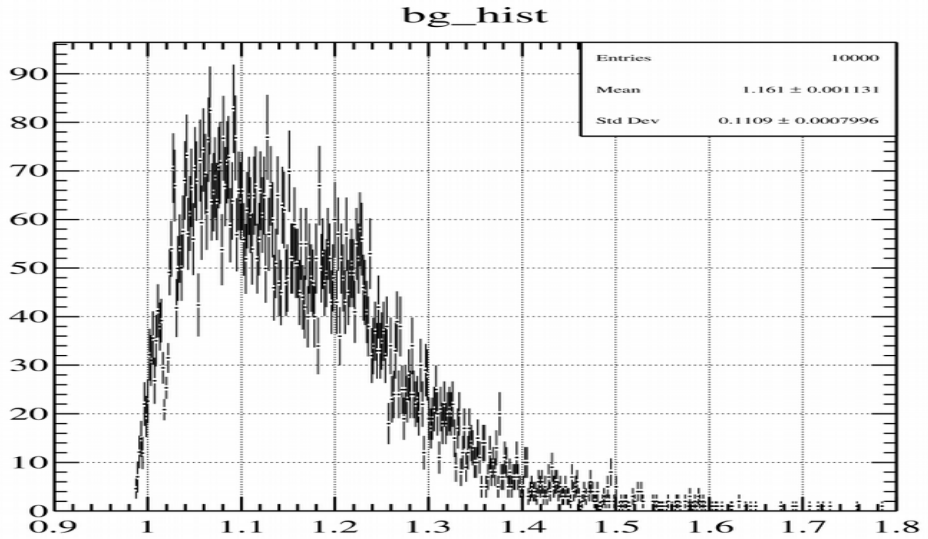


Background Events

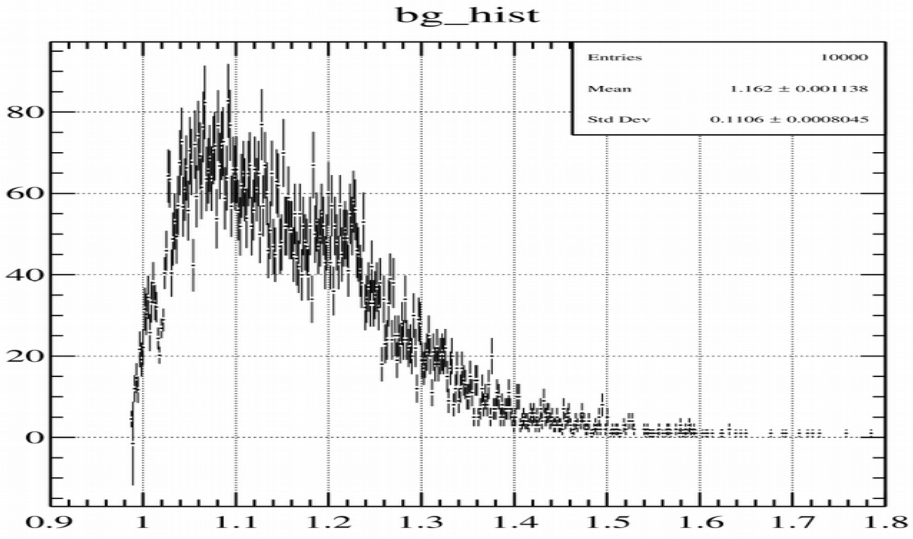


Background Events

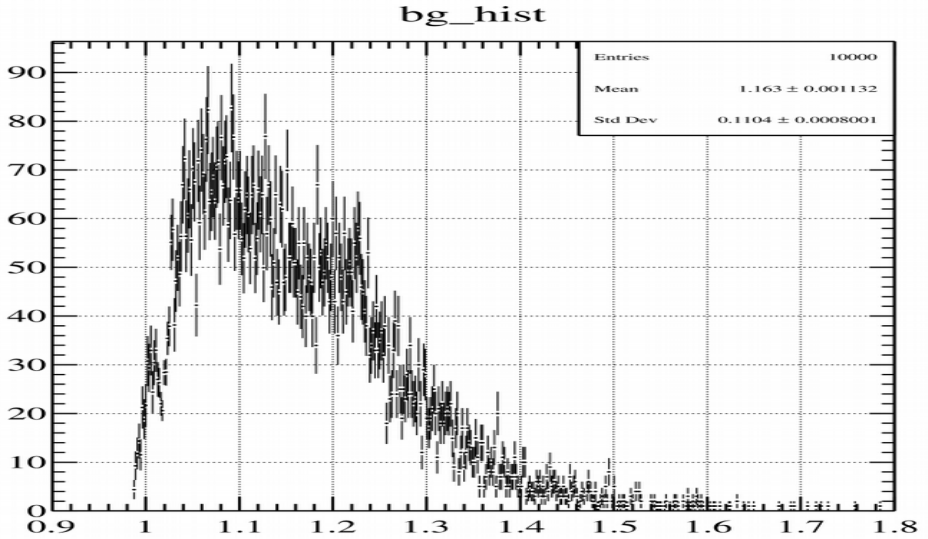
Sigma = 0.001



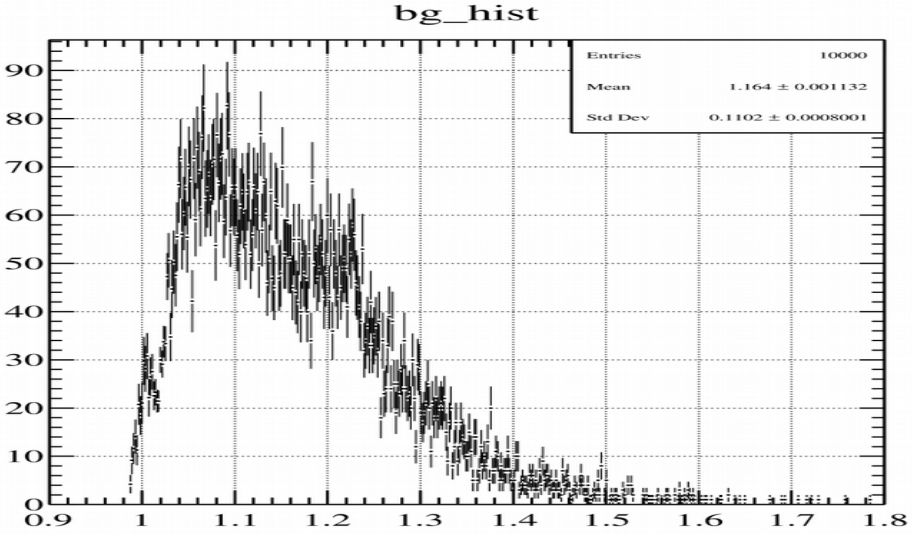
Sigma = 0.002



Sigma = 0.003

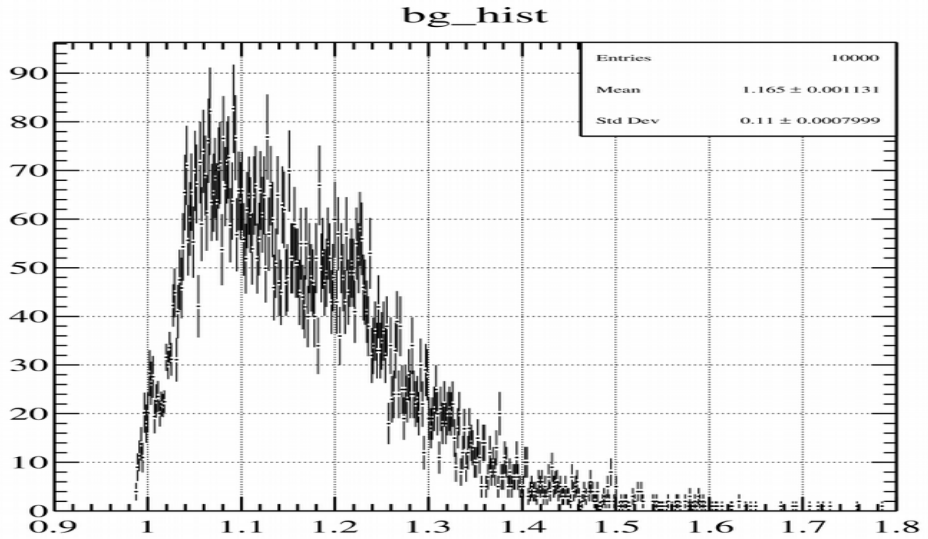


Sigma = 0.004

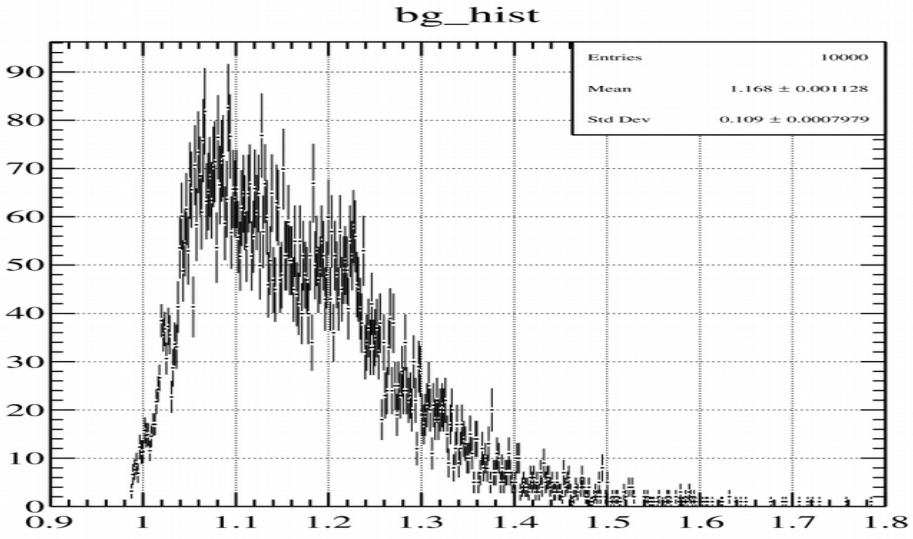


Background Events

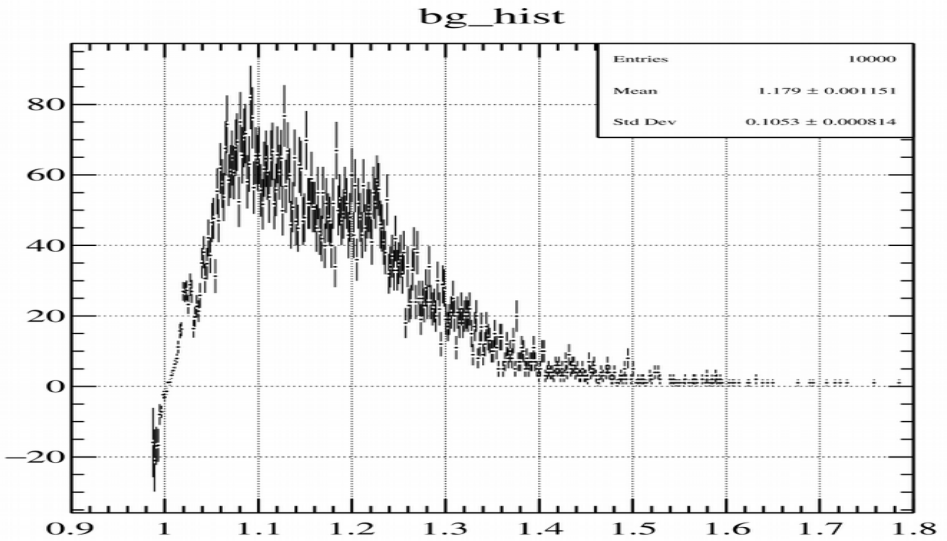
Sigma = 0.005



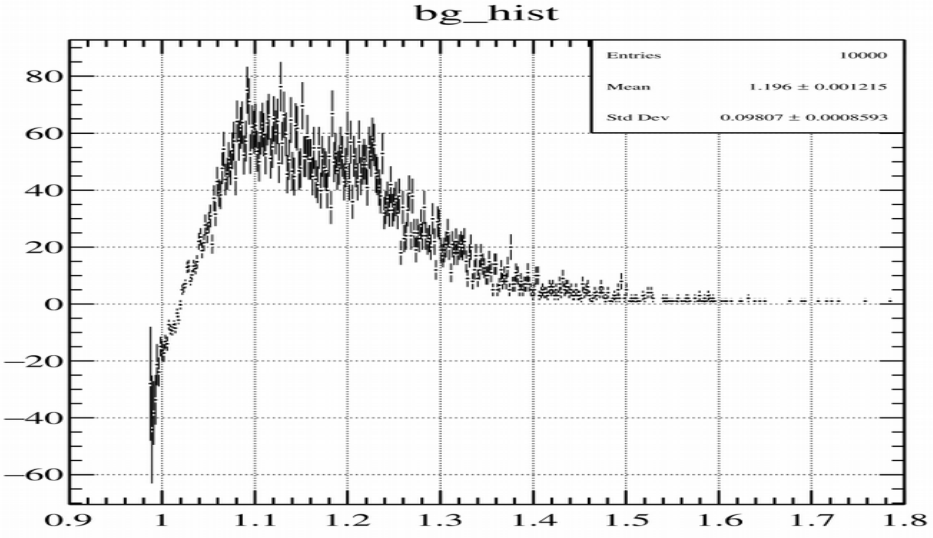
Sigma = 0.01



Sigma = 0.02



Sigma = 0.03



Signal + Background Events