Weekly Updates On nu e Meeting

Step-Fit Flux & Tests on Genie

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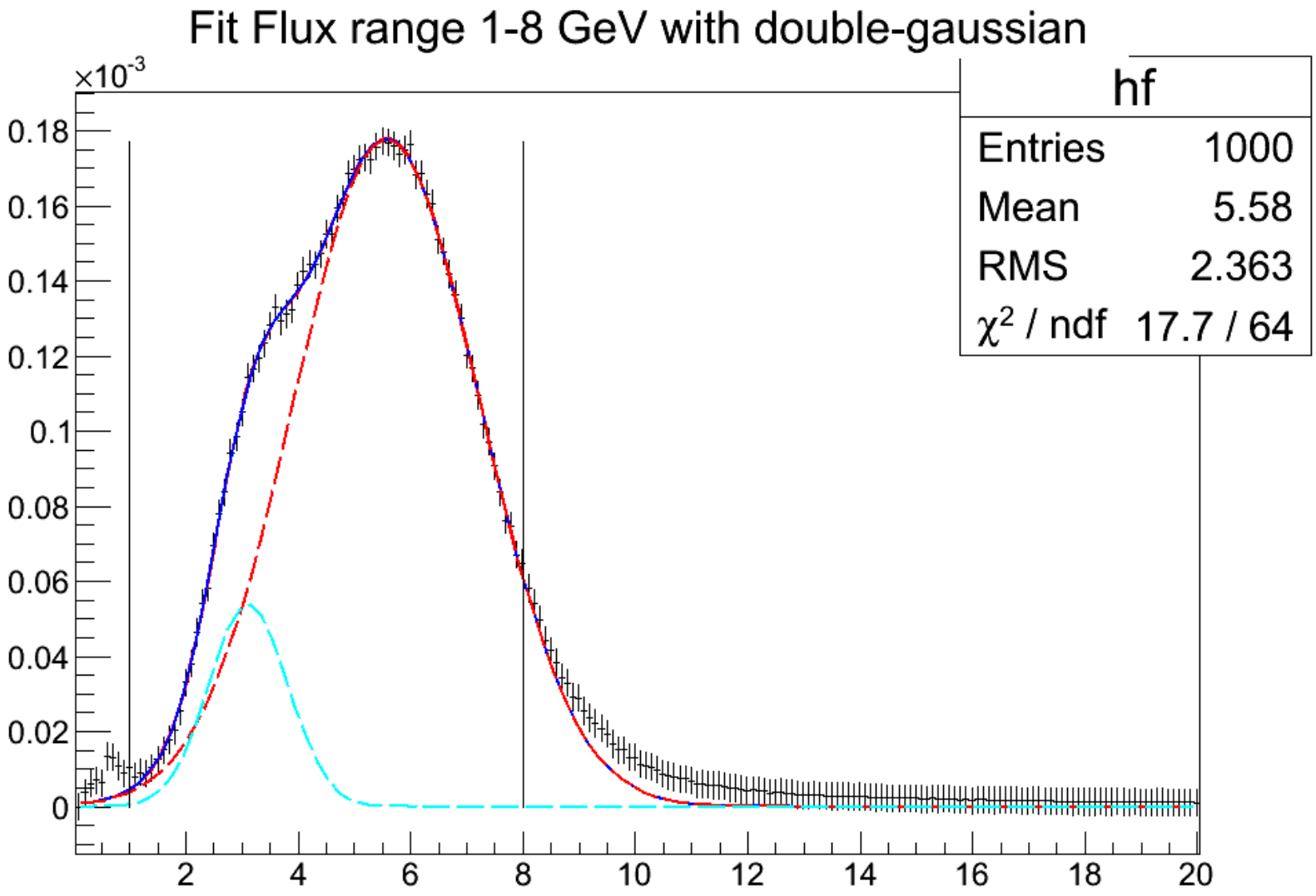
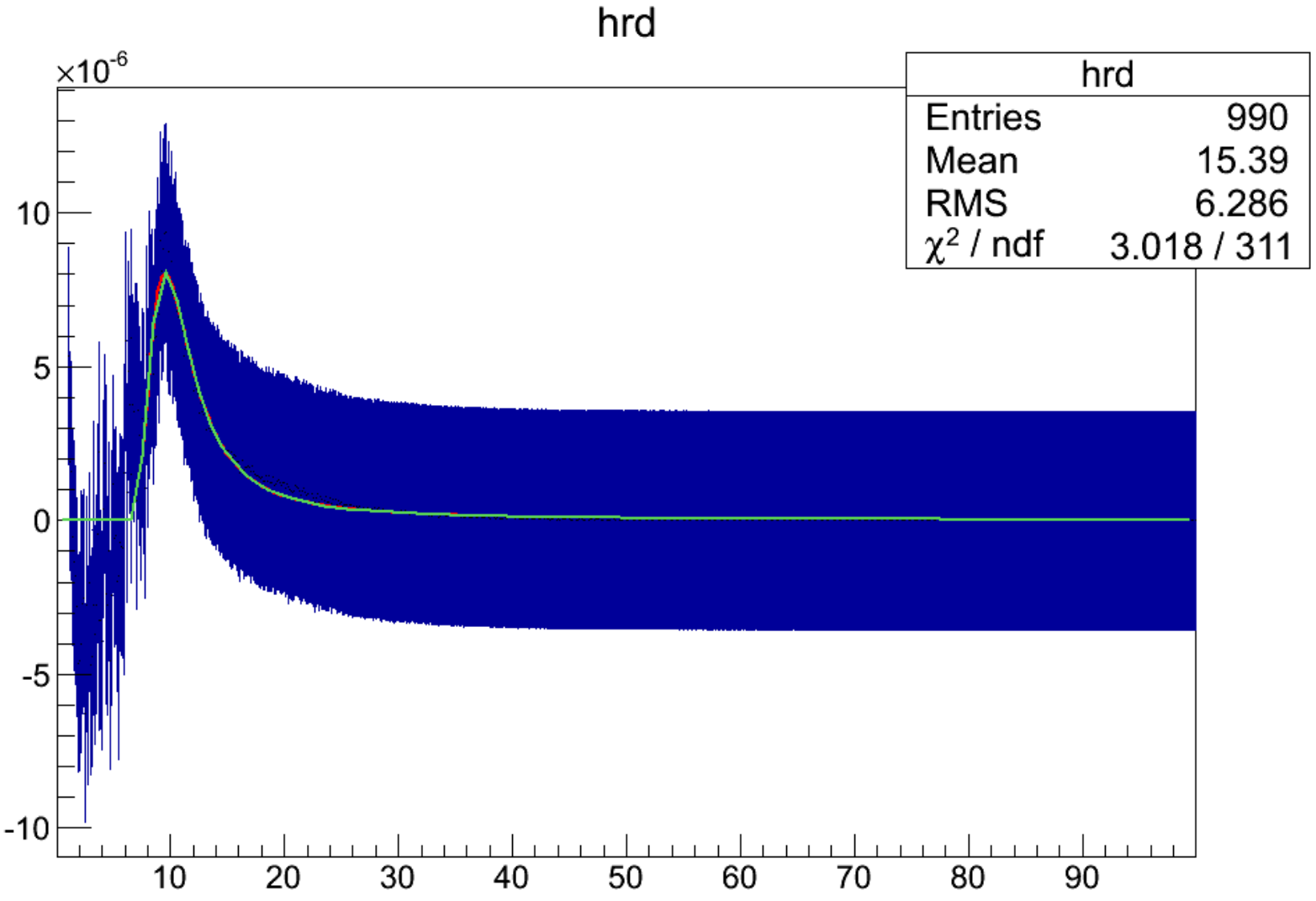
Fit Flux First Part 1-8 GeV With Two Gaussian



Pars: 1.77814e-04, 5.57458e+00, 1.65873e+00, 5.37954e-05, 3.11151e+00, 7.00717e-01

error: 9.13872e-07, 3.09112e-02, 3.20086e-02, 3.86747e-06,

Residue Histogram Fit



pars: 4.45492e-07, 9.69334e+00, 1.10667e+00, 9.91340e-01

error: 6.67215e-07, 2.17033e-01, 1.73846e-01, 3.86549e-01

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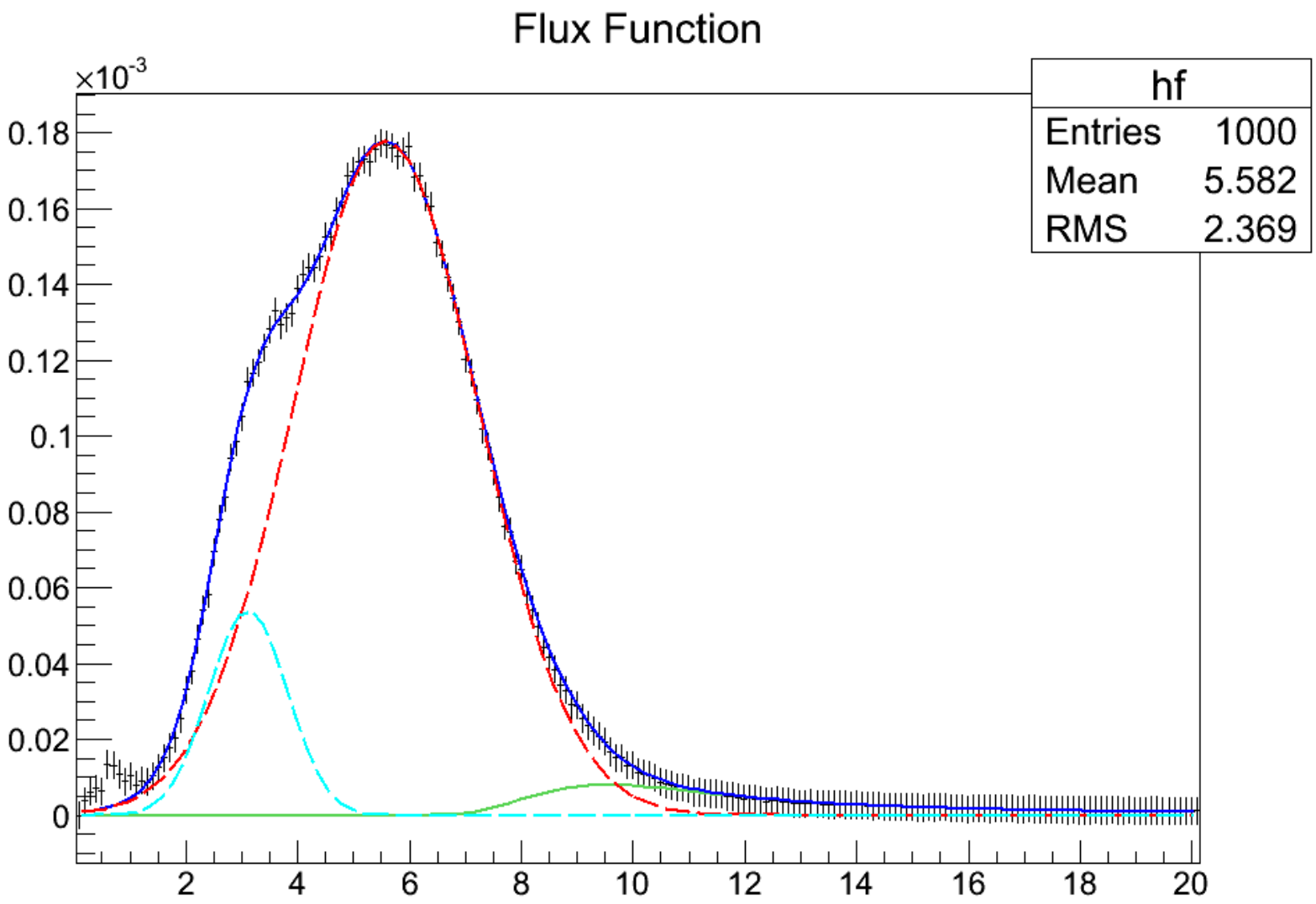
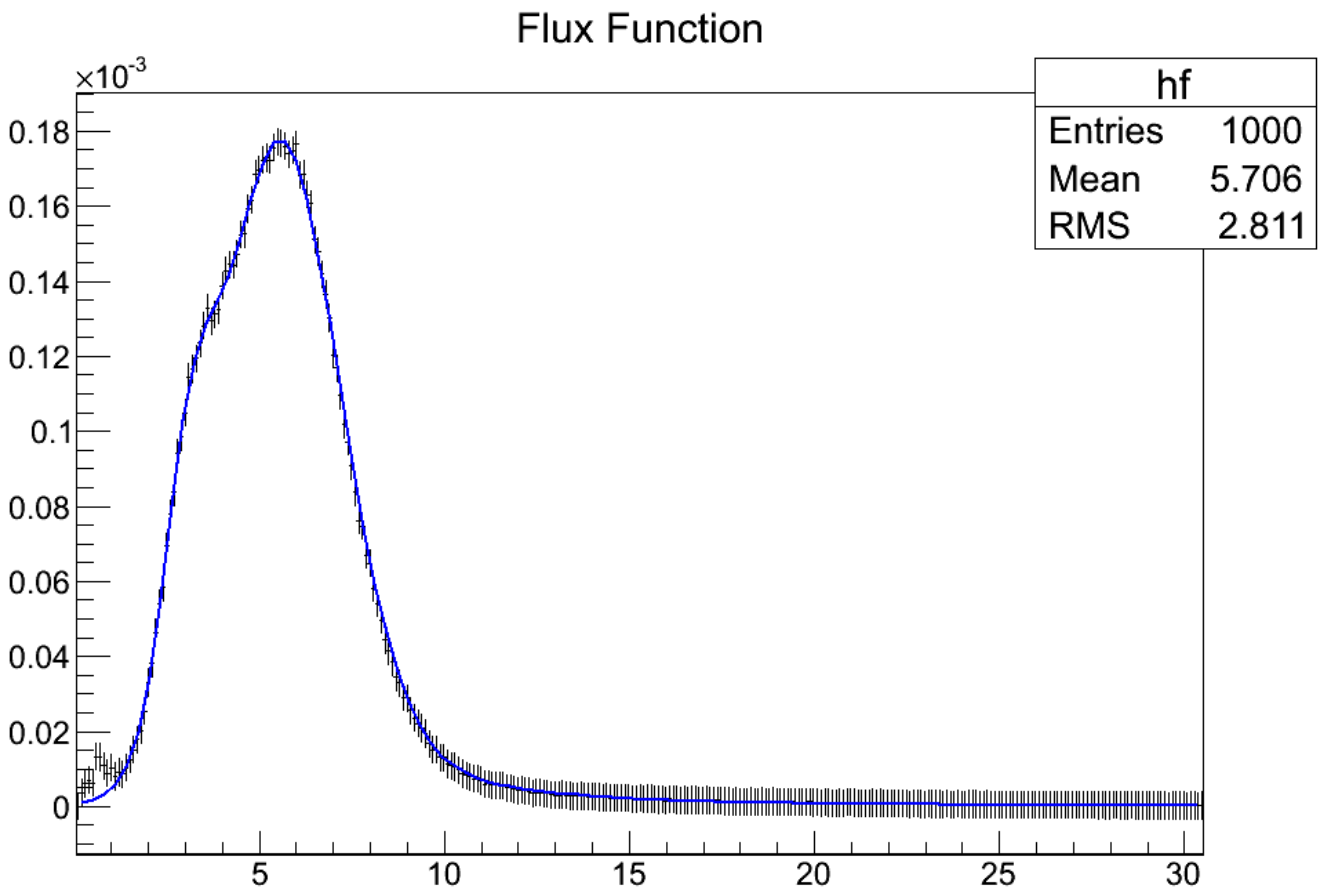
Flux Function Components

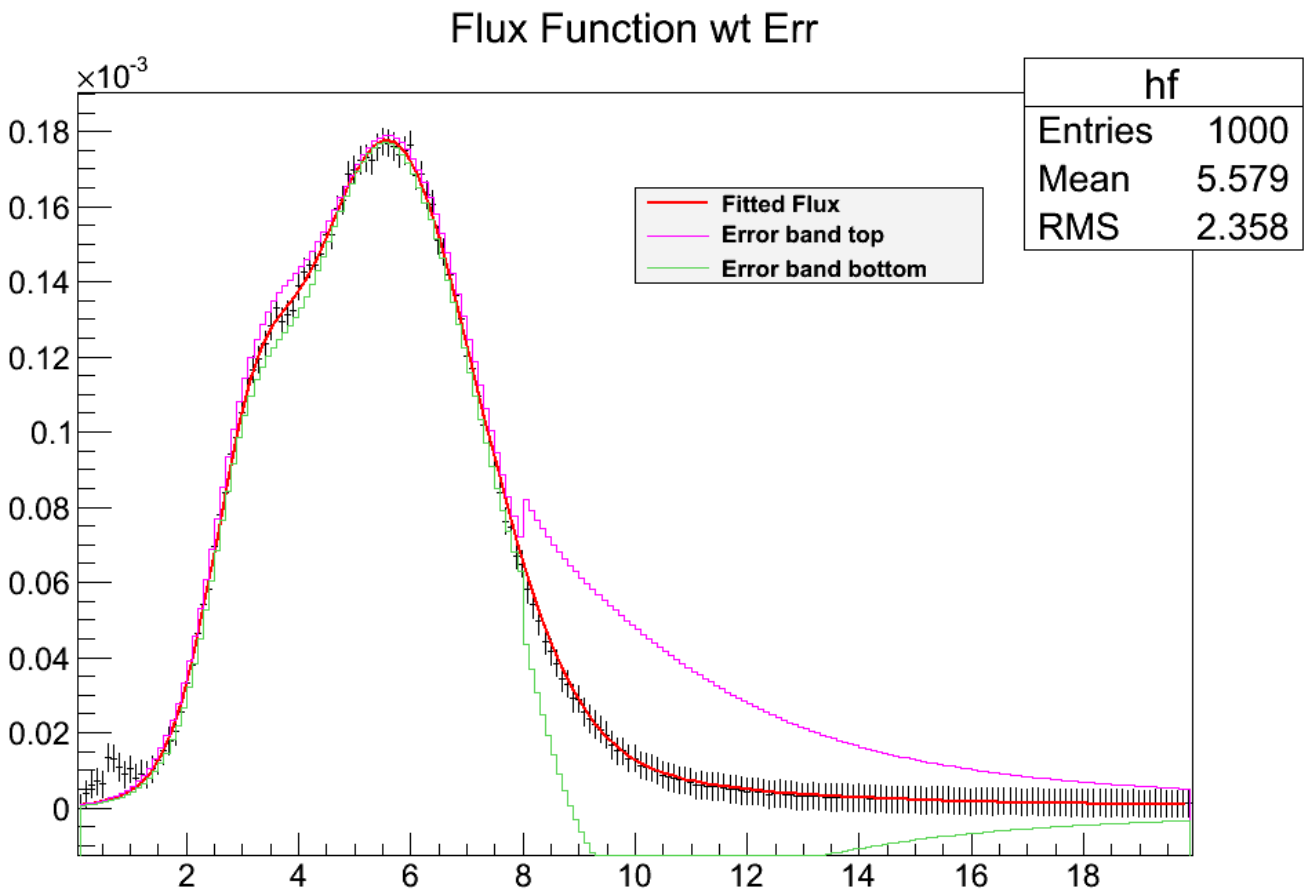


Whole Flux Function



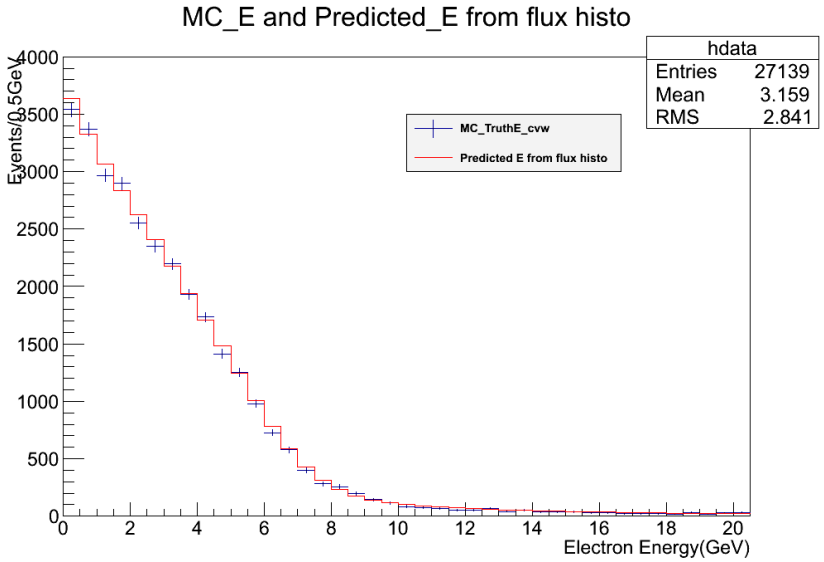
$$Flux = a1 \times e^{-\frac{1}{2}\left(\frac{E_\nu - m1}{s1}\right)^2} + a2 \times e^{-\frac{1}{2}\left(\frac{E_\nu - m2}{s2}\right)^2} + Landau\,(3) \times 3 \times (E_\nu + 25)^{[3]}$$

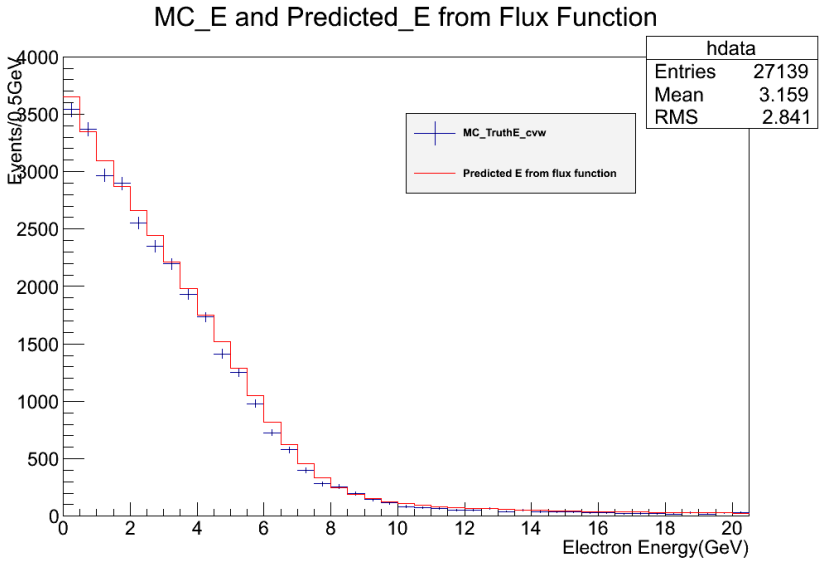
Whole Flux Function With Error Band



Flux Histogram Error: absolute error in each bin is 2% of the peak.
Function With Error: got error band from fitting for two ranges, two Gaussian (0-8 GeV) and Tail (8-100 GeV)

Ke Comparison of Gegie Sample and Predictions





Ke prediction from flux histo compare with Genie
$\chi^2 = 1.558$

Ke prediction from flux function compare with Genie
$\chi^2 = 17.964$

Backups

Error Matrix TMinuit Fitting 6 Pars for Two Gaussian

M[i,j]

8.35162e-13	2.82489e-08	2.92518e-08	3.53437e-12	2.31519e-08	3.69942e-08
2.82489e-08	0.000955502	0.000989424	1.19548e-07	0.000783098	0.00125131
2.92518e-08	0.000989424	0.00102455	1.23792e-07	0.000810899	0.00129573
3.53437e-12	1.19548e-07	1.23792e-07	1.49573e-11	9.79777e-08	1.56558e-07
2.31519e-08	0.000783098	0.000810899	9.79777e-08	0.000641801	0.00102553
3.69942e-08	0.00125131	0.00129573	1.56558e-07	0.00102553	0.00163869

Error Matrix TMimuit Fitting 4 pars of Tail

M[i,j]

4.45176e-13	1.44808e-07	1.15993e-07	2.57911e-07
1.44808e-07	0.0471033	0.0377303	0.0838939
1.15993e-07	0.0377303	0.0302224	0.0672
2.57911e-07	0.0838939	0.0672	0.14942