

ST Calibration Update Attenuation Measurements

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Attenuation Corrections Beam Data

- Attempts to fit dE/dx spectra failed
 - Both with and without momentum/PID cuts
- Both Vavilov and convoluted Landau/Gaussian distributions were attempted
 - Various binning schemes attempted
 - Reduction in number of sections along scintillator does not improve statistics enough to perform reliable fits
 - Improved Minos error calculation implemented and still no improvement

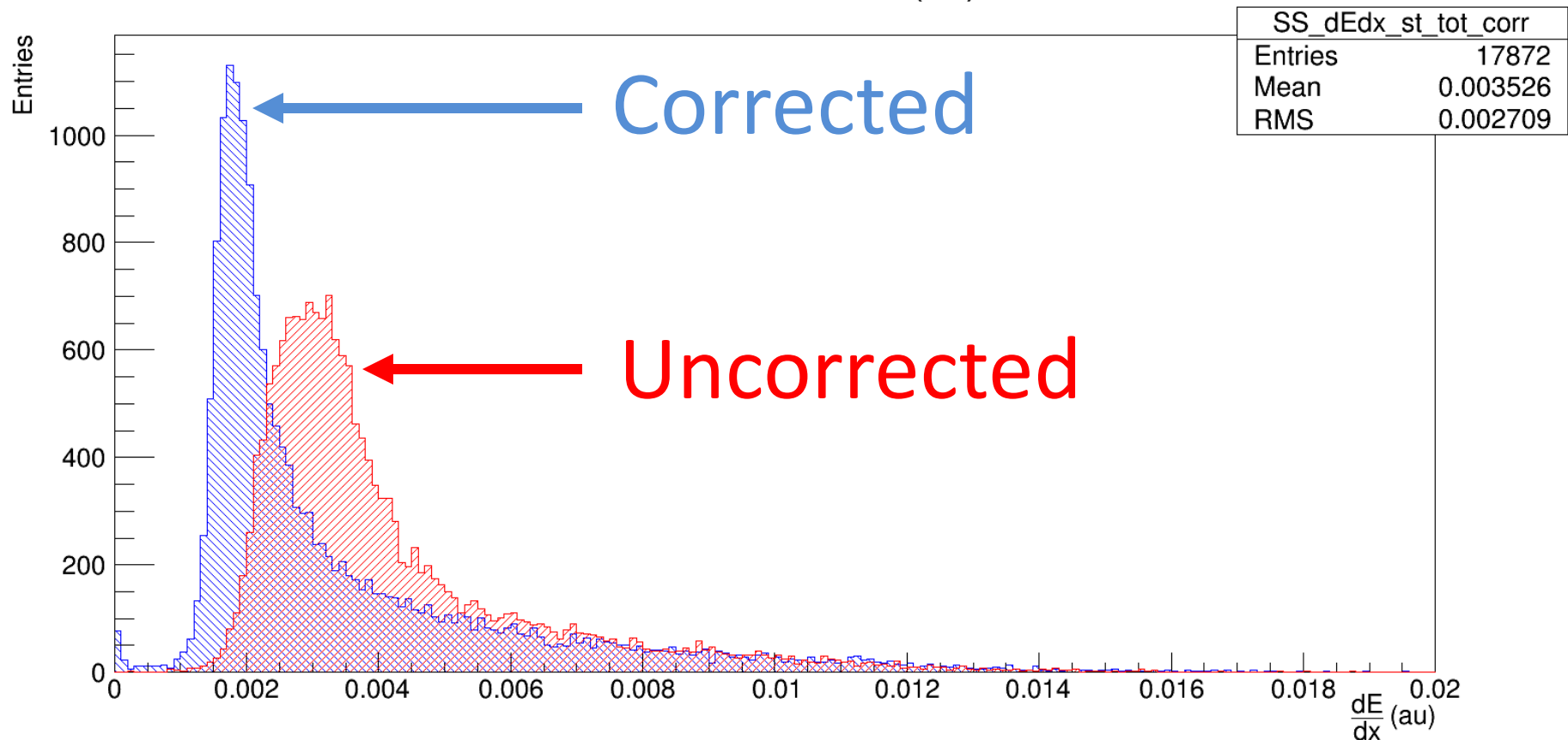
Attenuation Corrections Beam Data

- The Vavilov distribution is a more accurate energy straggling distribution
- Generalization of the Landau distribution
 - Takes into account the maximum allowable energy transfer of a particle traversing through a medium
- $\kappa = \bar{\epsilon}/E_{\max}$
 - $\kappa \rightarrow 0$ Landau distribution
 - $\kappa \rightarrow \infty$ Gaussian distribution
- Computationally less expensive than custom Landau/Gaussian convolution
 - ROOT has PDF built into TMath library
- Bench data must be used for now
- Procedures to perform analysis with more data is in place

Attenuation Corrections (Bench Data)

- Run 2931, 100k events
- All sectors, straight section

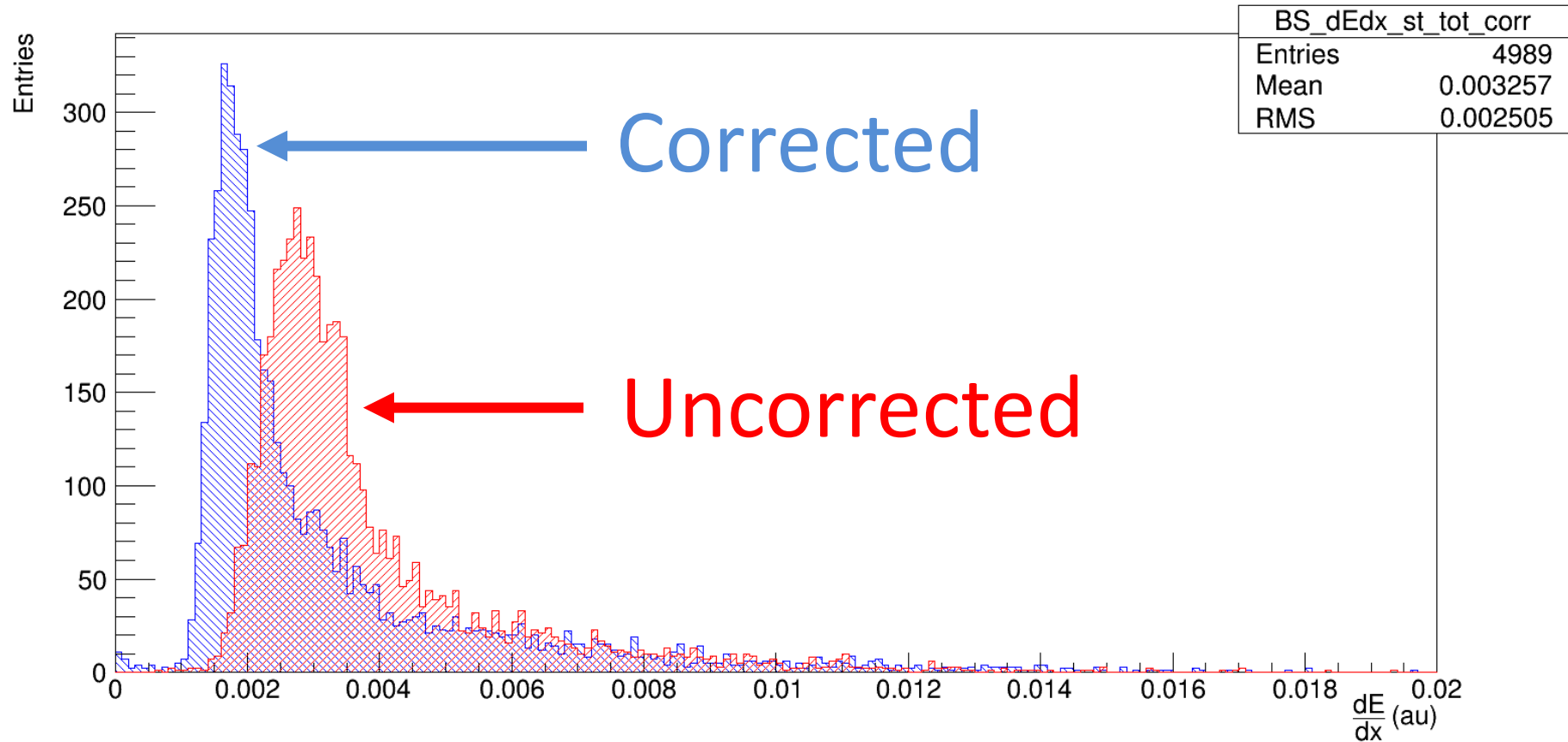
SS Corrected dEdx (au)



Attenuation Corrections (Bench Data)

- Run 2931, 100k events
- All sectors, bend section

BS Corrected dEdx (au)



Attenuation Corrections (Bench Data)

- Run 2931, 100k events
- All sectors, nose section

