

Optics Status Update

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Simulation Package

- Simulation package update
 - Test the cross section weighted distribution with P. Bosted model
 - Add an elastic ^{12}C model Using the fitting result of the charge distribution of ^{12}C from Larry Cardman (still working on this)

Simulation Package

- Conditions
 - $E = 2.254\text{GeV}$, $P_0 = 1.500\text{GeV}$
 - 28mm target length
 - raster radius set to 1.5cm
 - target field set to 2.5T
 - use P. Bosted model to give quasi-elastic and inelastic cross section

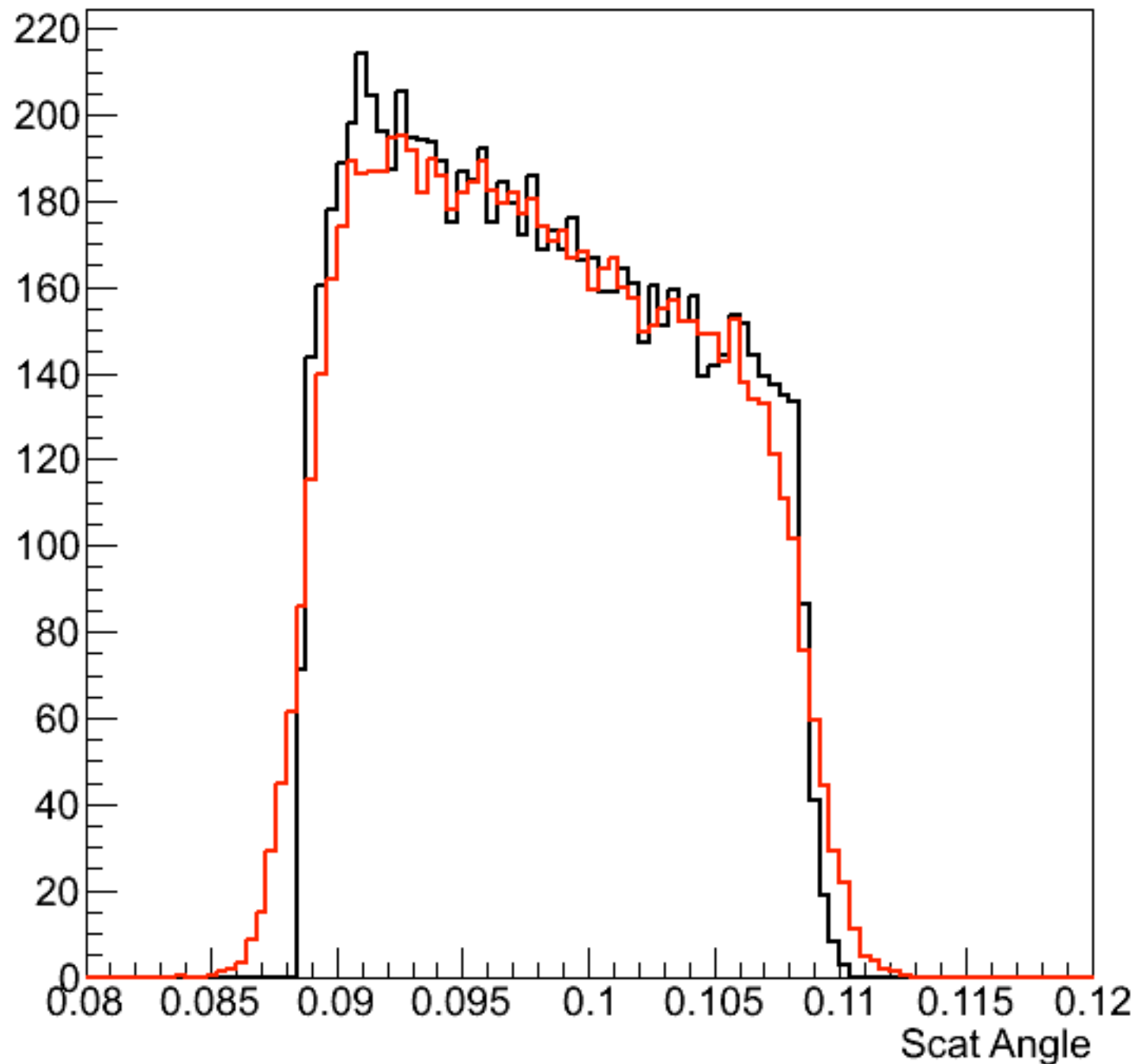
Distribution weighted by XS

Scat Angle (weight by XS)

Red : reconstructed

Black : original

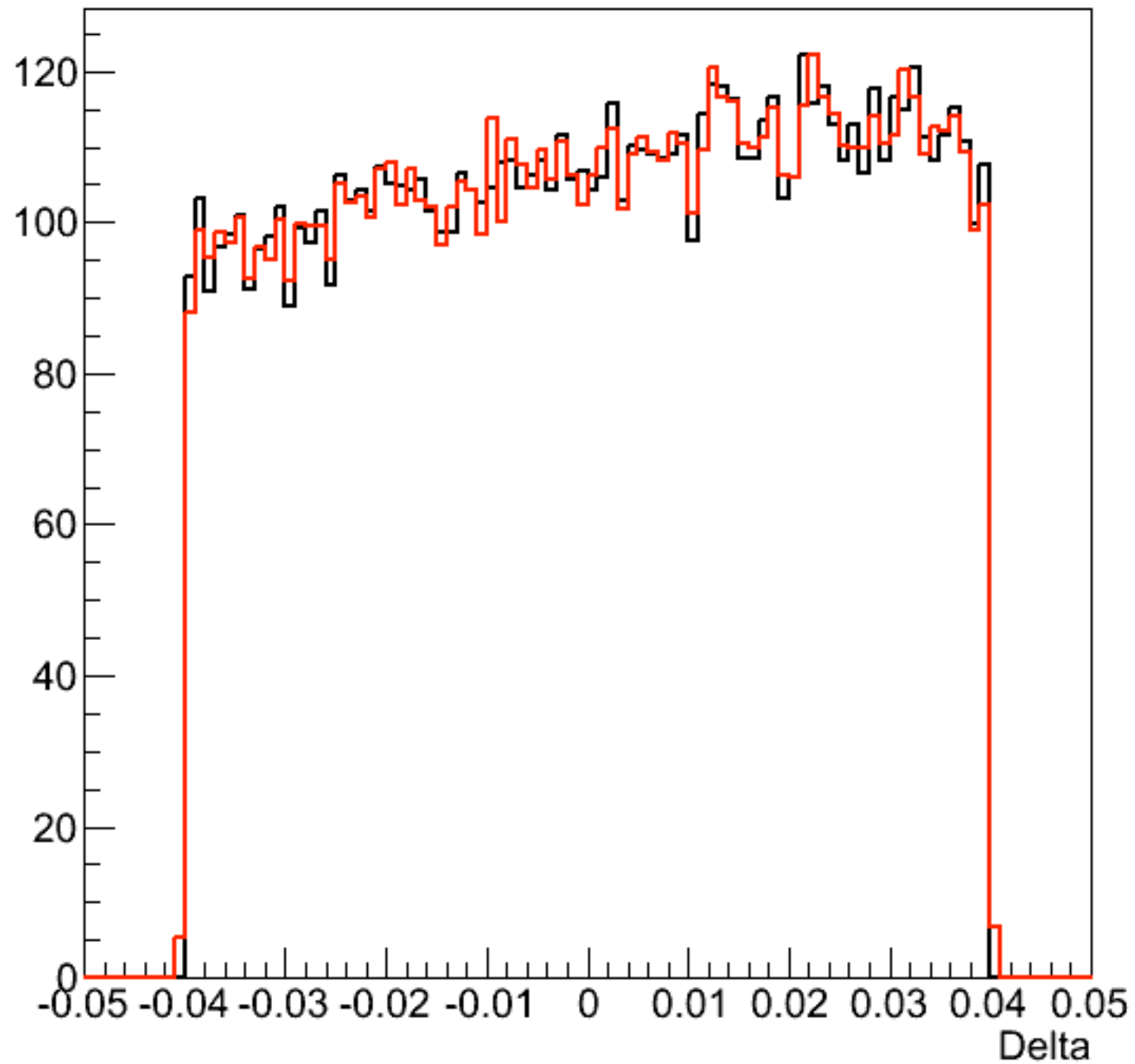
$$\frac{\langle \theta_{\text{rec}} \rangle}{\langle \theta_{\text{real}} \rangle} = 0.995$$



B = 2.5T

Distribution weighted by XS

Delta (weight by XS)



Red : reconstructed

Black : original

$$\frac{\langle \delta_{\text{rec}} \rangle}{\langle \delta_{\text{real}} \rangle} = 0.982$$

B = 2.5T

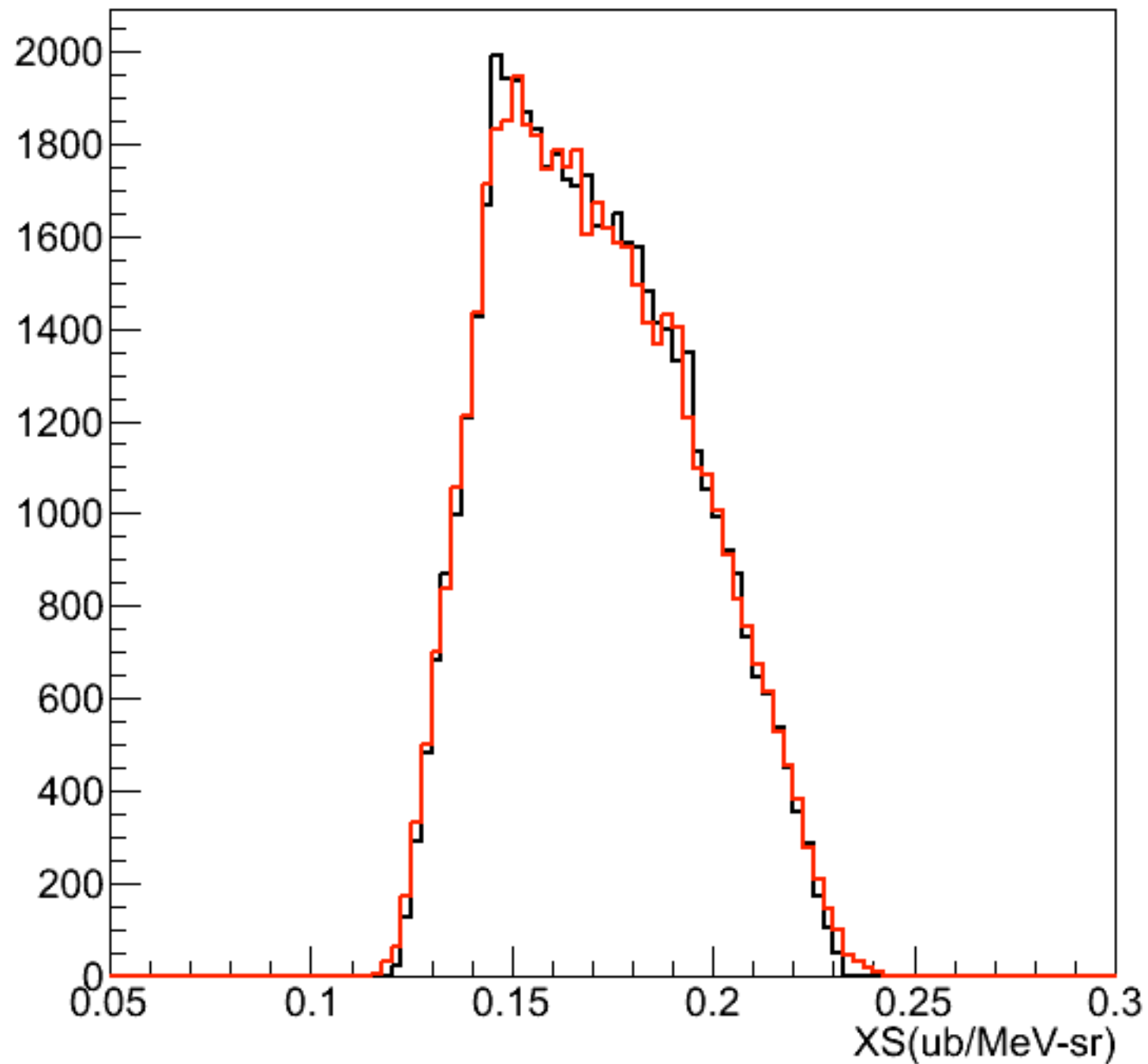
Distribution weighted by XS

Cross section central value

Red : reconstructed

Black : original

$$\langle \sigma_{\text{rec}} \rangle / \langle \sigma_{\text{real}} \rangle = 1.010$$



B = 2.5T

Simulation Package

- TODO
 - Finish the elastic ^{12}C model