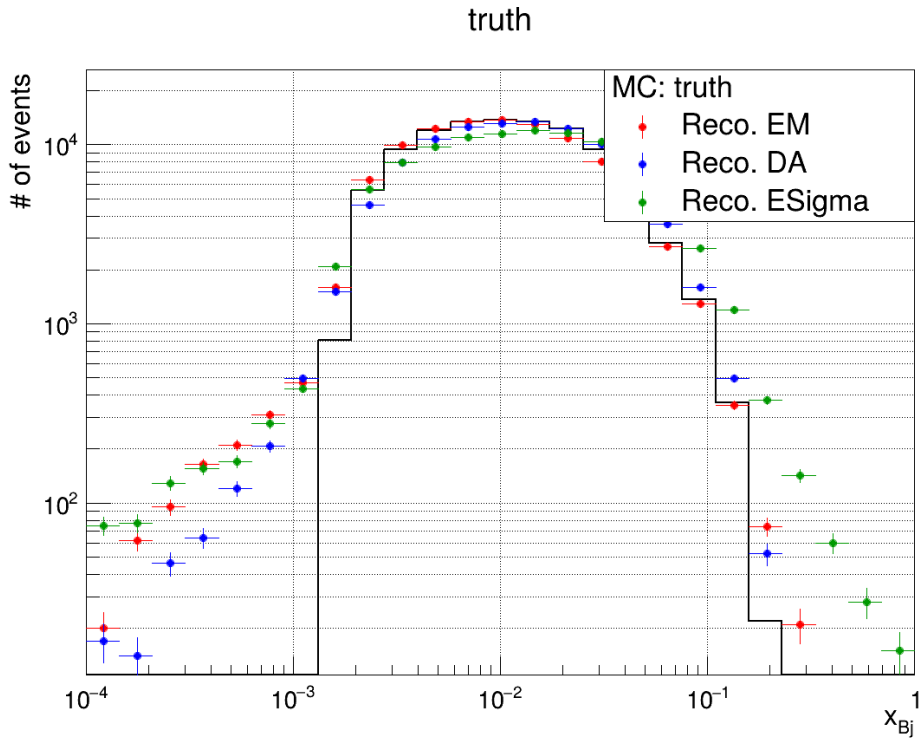
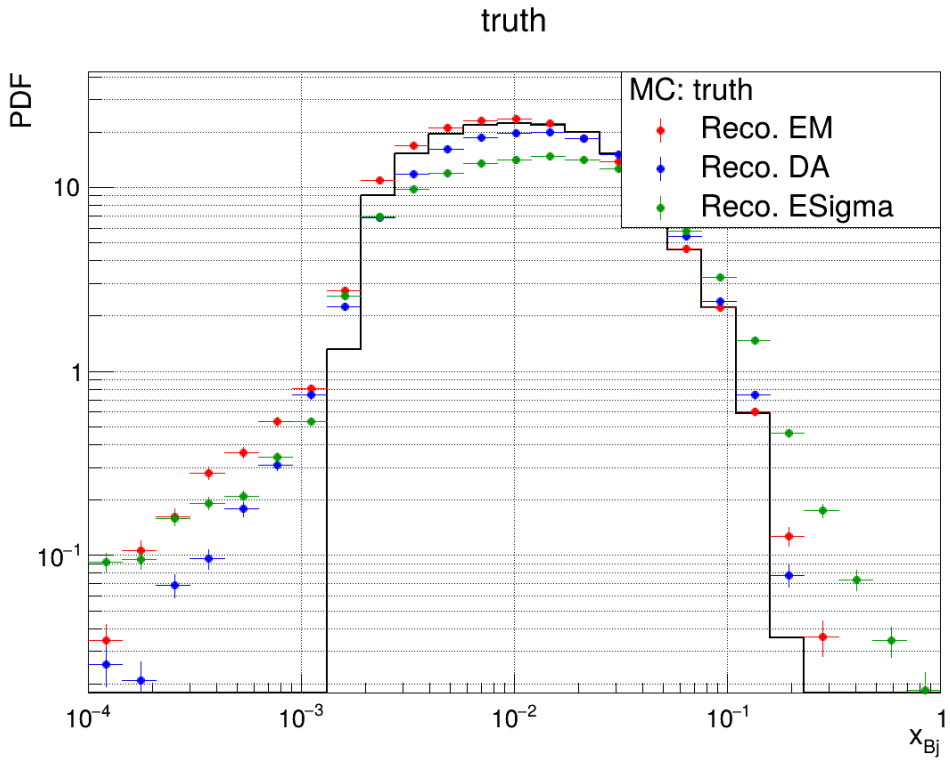
DPDF Meetings

Sep. 30

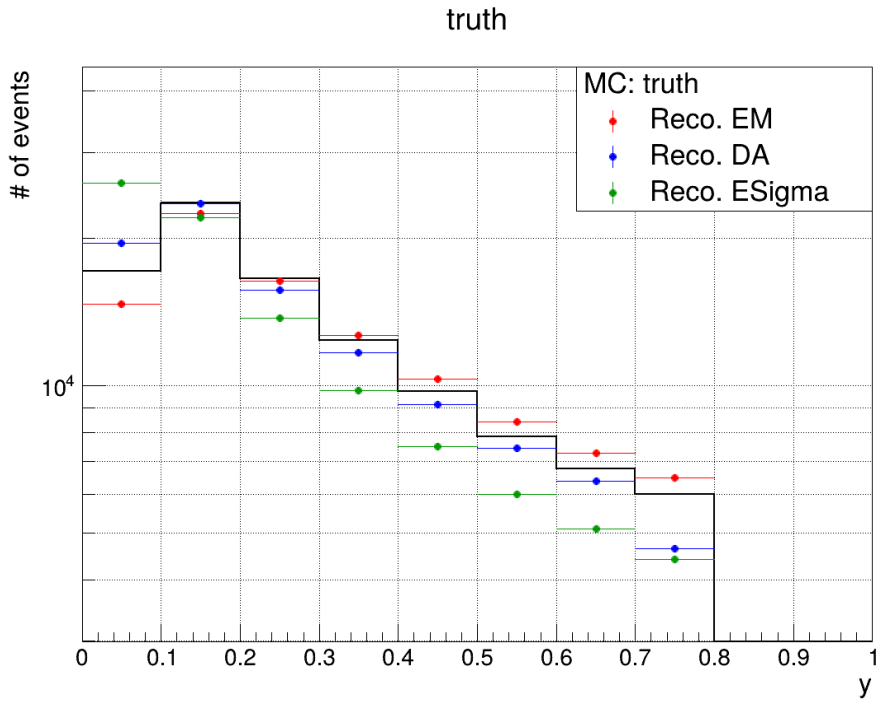
Hadi Hashamipour

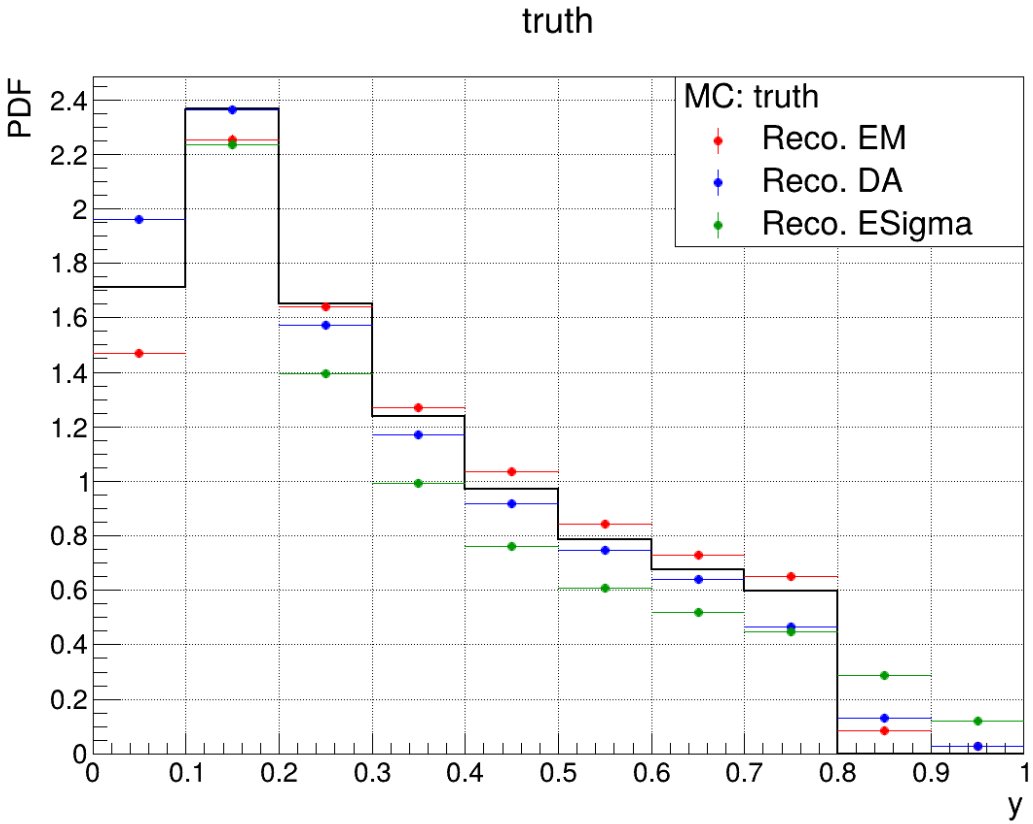
10x100 100K Inclusive



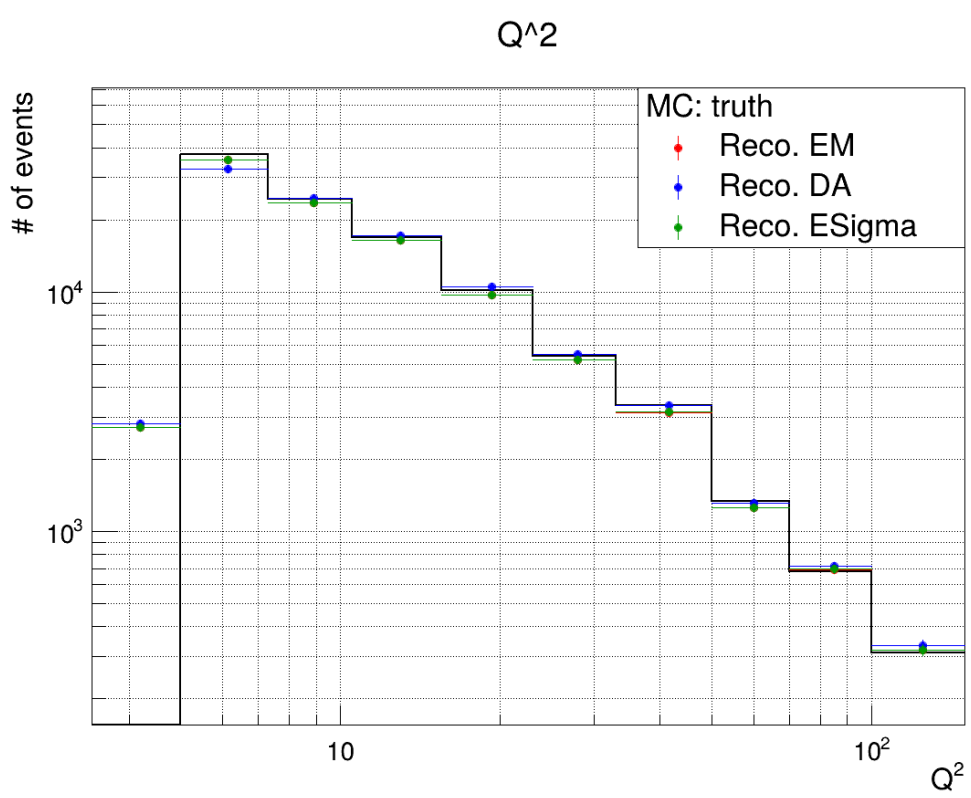


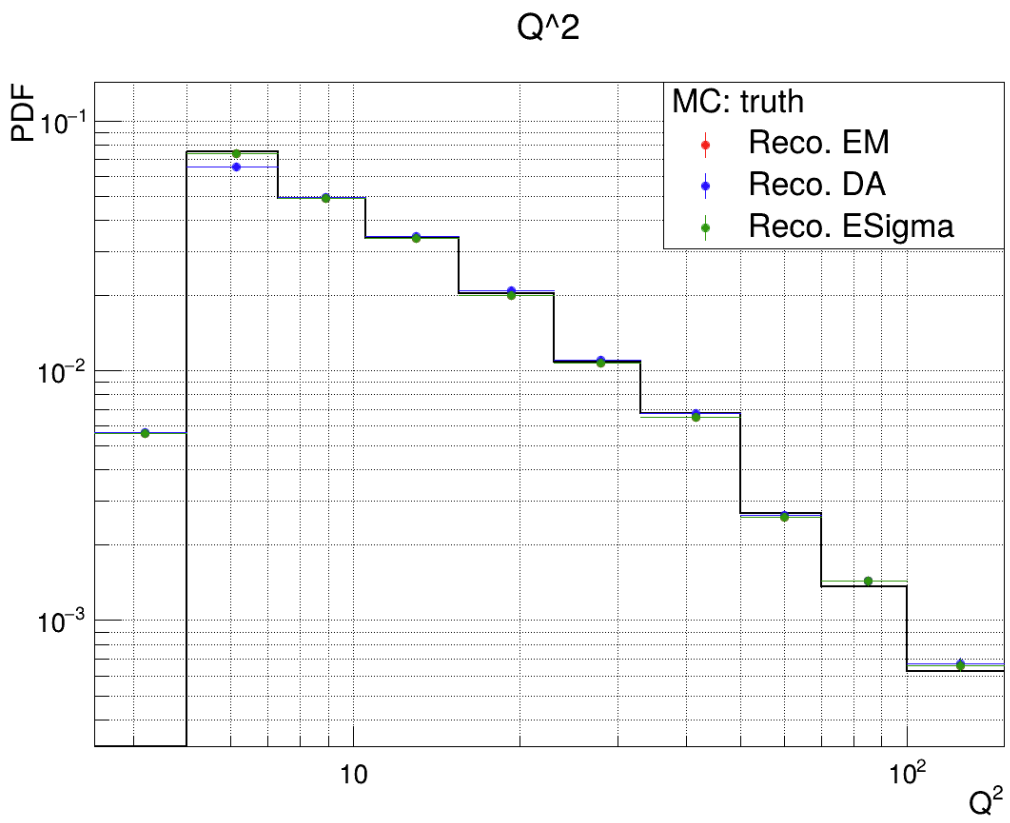
inelasticity



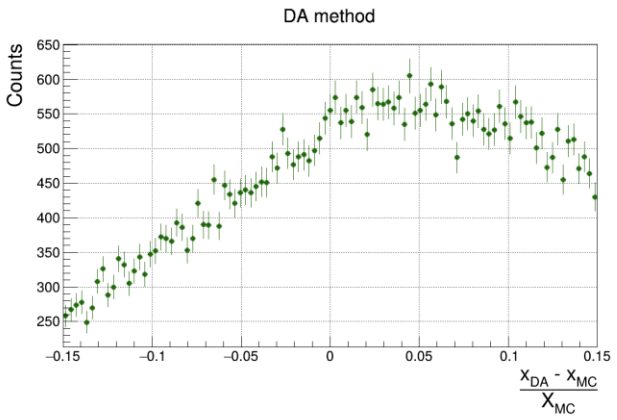


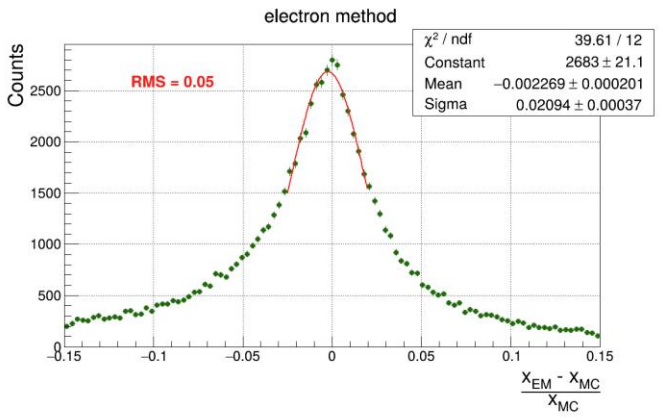
Q2

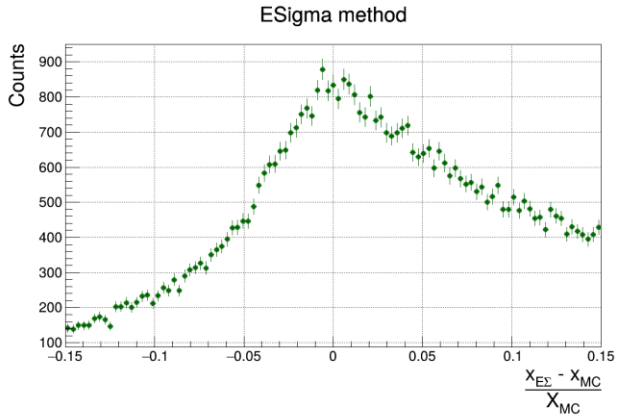

Q^2
# of events
MC: truth
Reco. EM
Reco. DA
Reco. ESigma
10^4
10^3
10
10^2
Q^2

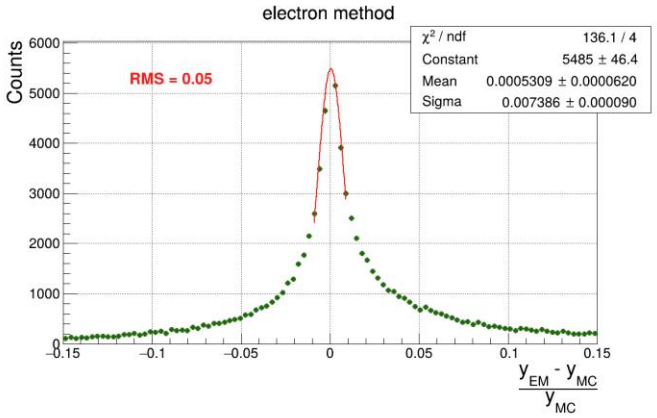

Q^2
PDF
MC: truth
Reco. EM
Reco. DA
Reco. ESigma
10^{-1}
10^{-2}
10^{-3}
10
10^2
Q^2

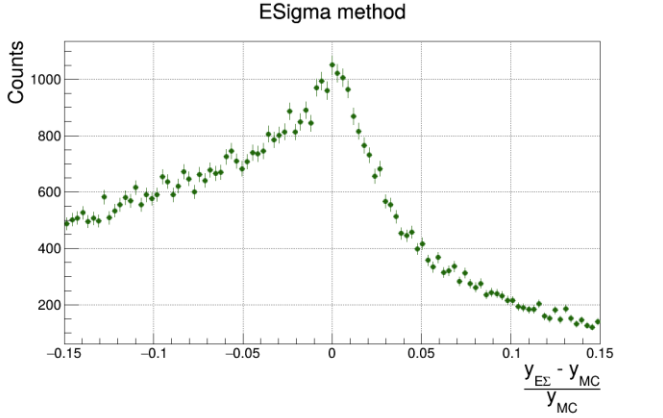
Overall resolution

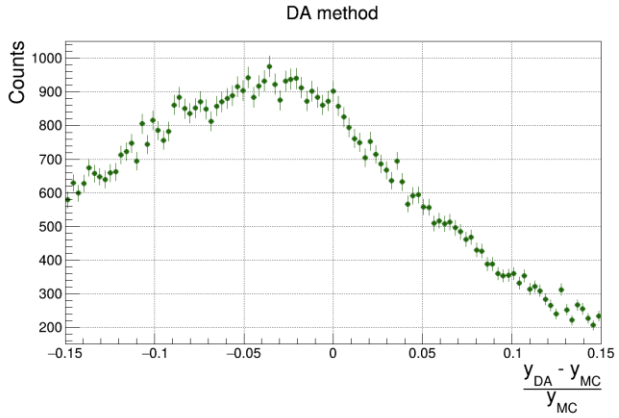




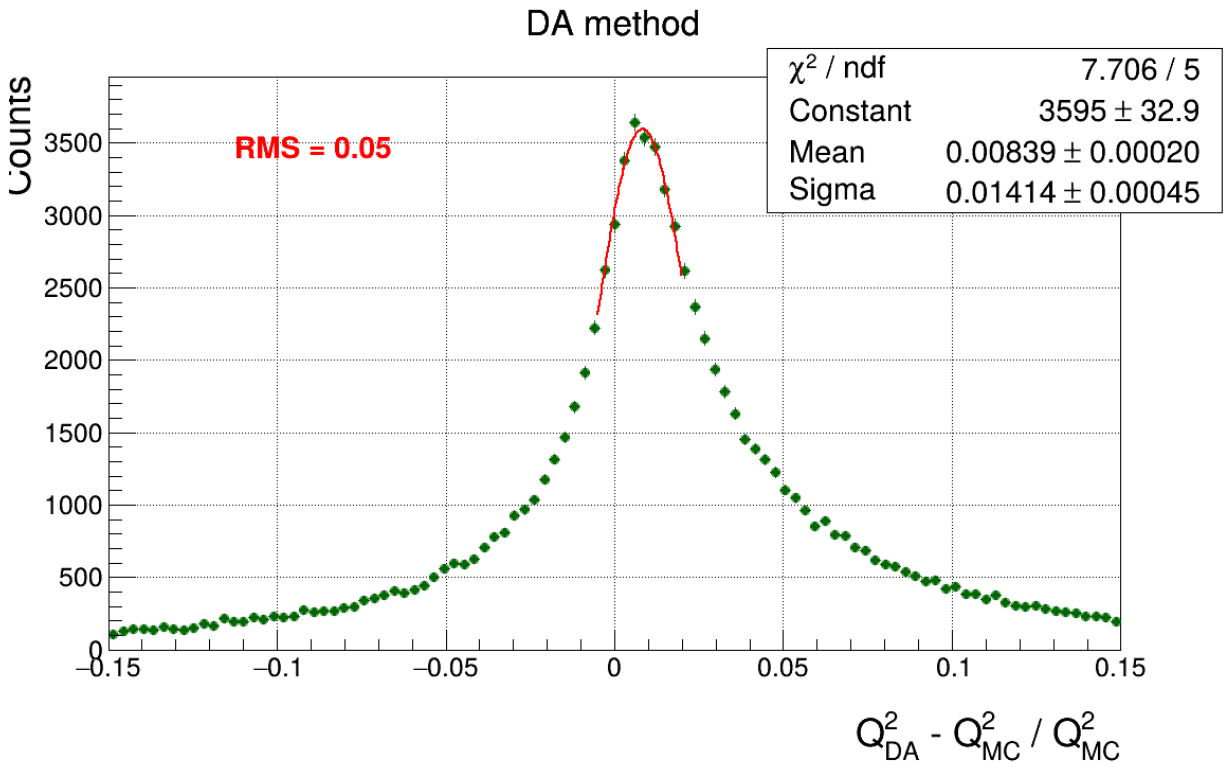


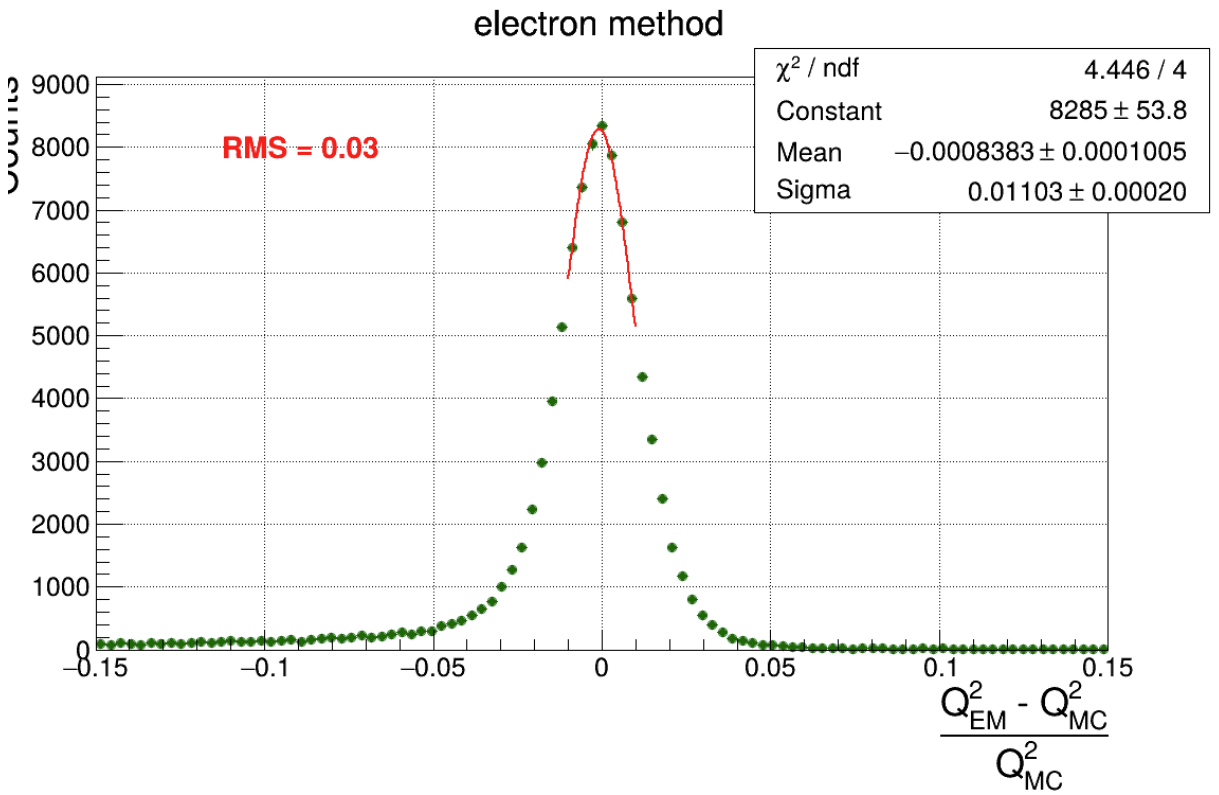






Overall resolution - 2

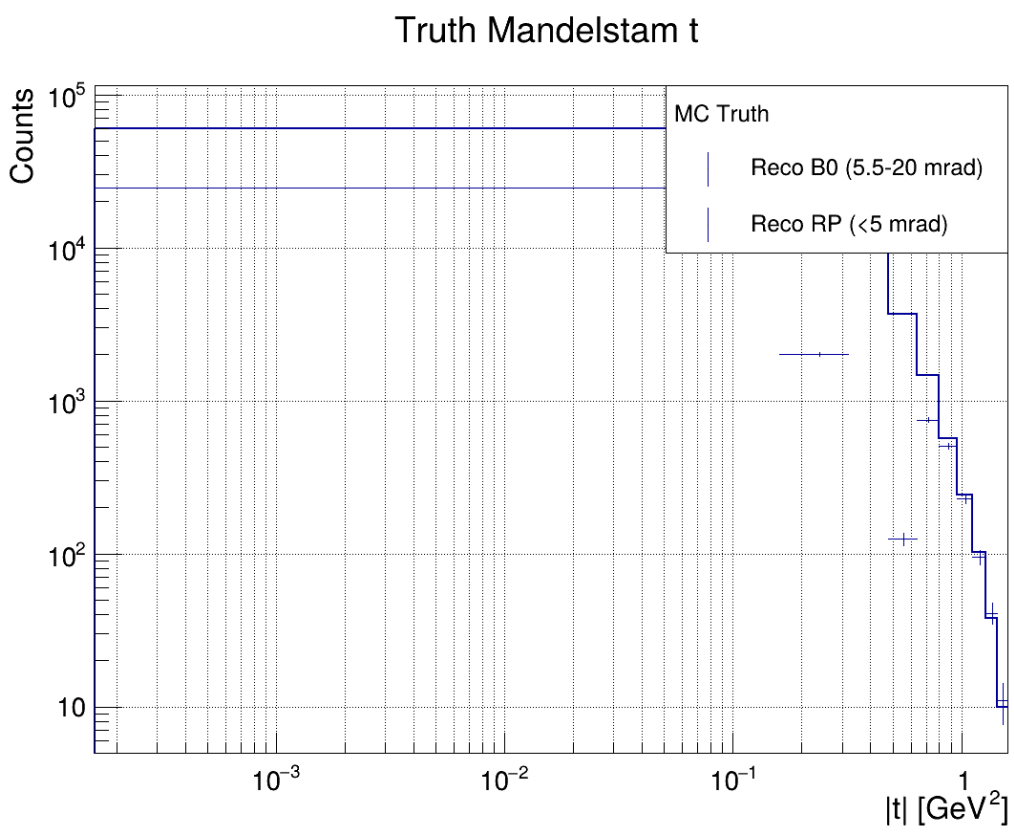


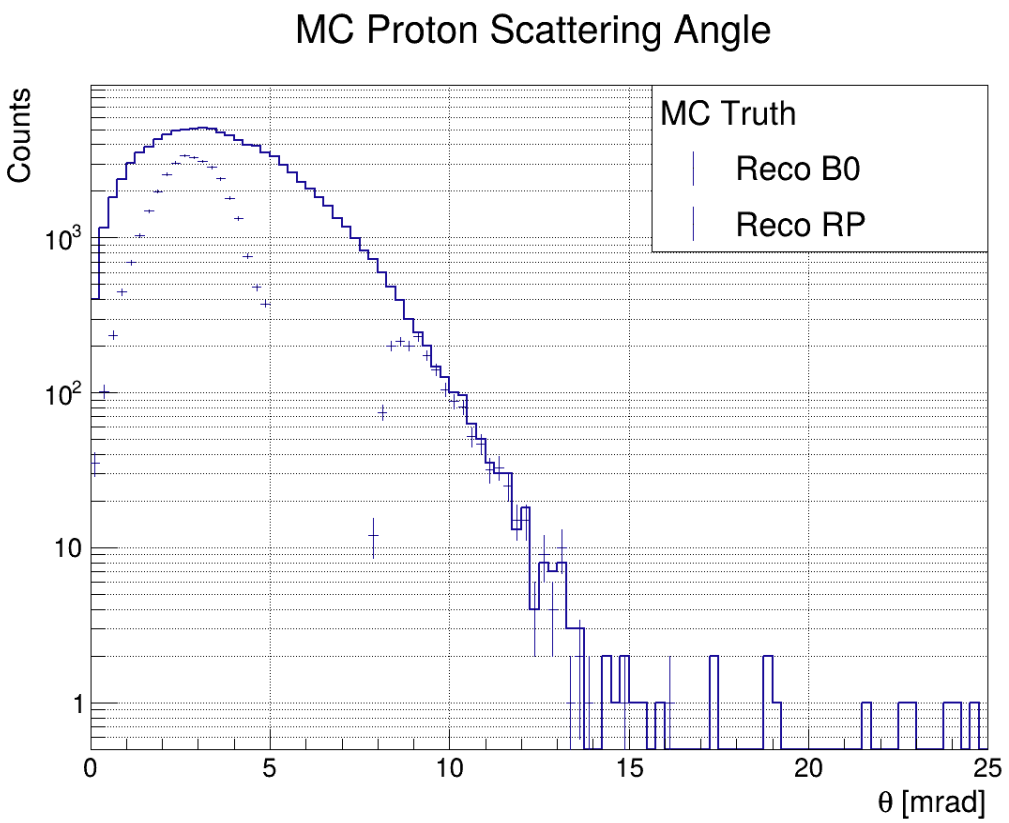


tReco convention

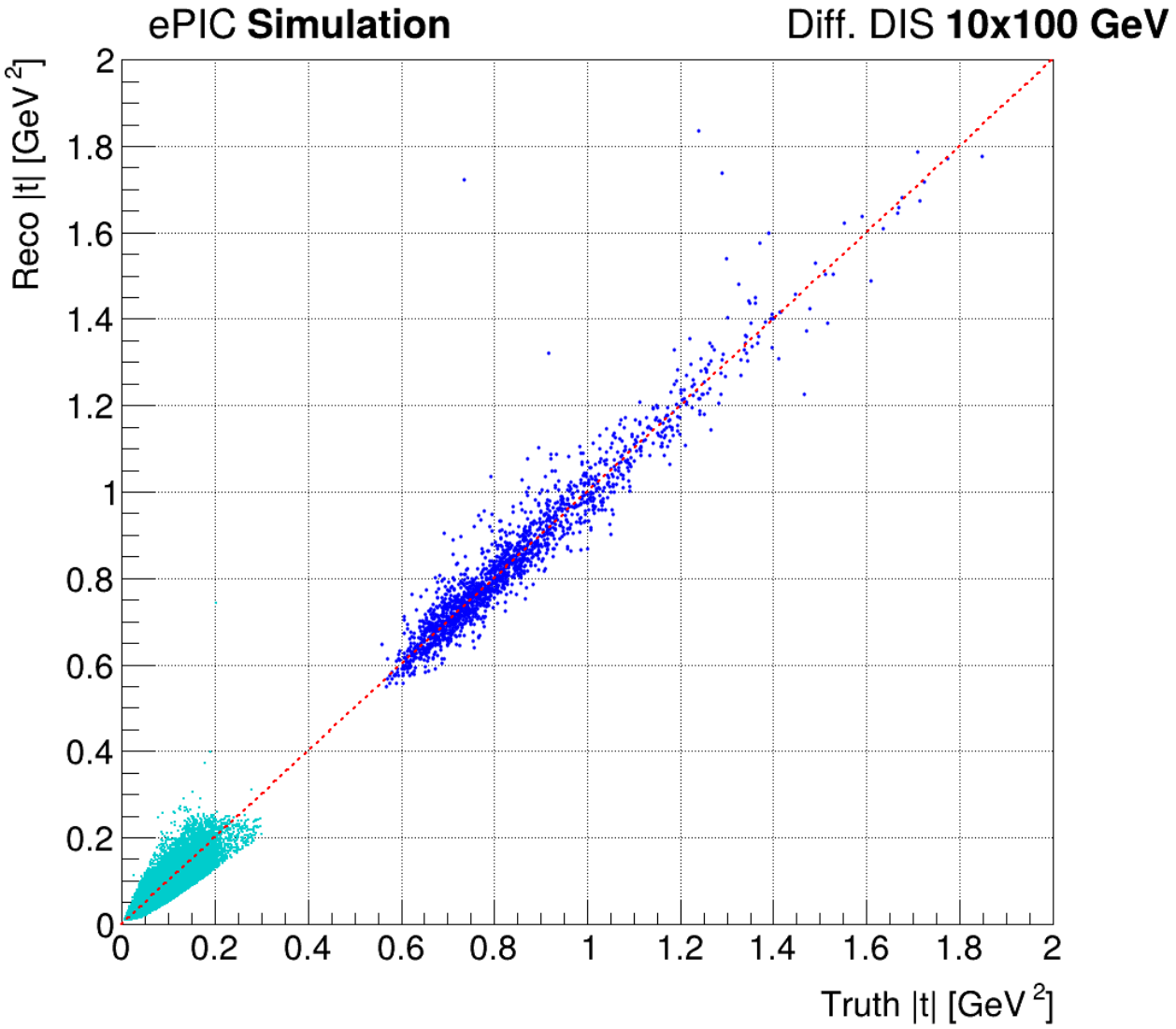
Class name	Observables used	Example(s)
BABE	p^μ_{BA}, p^μ_{BE}	$-t = (p^\mu_{\mathrm{BA}} - p^\mu_{\mathrm{BE}})^2$ or $t = \lvert\vec{p}^{\,\mathrm{T}}_{\mathrm{BA}}\rvert^2$
eX	$p^\mu_{\gamma^*}$, p^μ_{X}	$-t = (p^\mu_{\gamma^*} - p^\mu_{\mathrm{X}})^2$ or $t = \lvert\vec{p}^{\,\mathrm{T}}_{\mathrm{X}} + \vec{p}^{\,\mathrm{T}}_{e'}\rvert^2$
eXBA	$p^\mu_{\gamma^*}$, p^μ_{X}, p^μ_{BA}	$-t = (p^\mu_{\mathrm{corr}} - p^\mu_{\mathrm{X}})^2$
		$p^\mu_{\mathrm{corr}} = (\frac{\Sigma_{\mathrm{XBA}}}{2} - \frac{E_{e'}}{2}(1+\cos\theta_{e'}), p^\mu_{\gamma^*}[1], p^\mu_{\gamma^*}[2], -\frac{\Sigma_{\mathrm{XBA}}}{2} - \frac{E_{e'}}{2}(1+\cos\theta_{e'}))$
		$\Sigma_{\mathrm{XBA}} := (E_{\mathrm{X}} - p^z_{\mathrm{X}}) + (E_{\mathrm{BA}} - p^z_{\mathrm{BA}})$
eXBE	$p^\mu_{\gamma^*}$, p^μ_{X}, p^μ_{BE}	$-t = (p^\mu_{\mathrm{corr}} - p^\mu_{\mathrm{BE}})^2$ or $t = \lvert\vec{p}^{\,\mathrm{T}}_{\mathrm{miss}}\rvert^2$
		$p^\mu_{\mathrm{corr}} = \left[\sqrt{\lvert\vec{p}_{\mathrm{miss}}\rvert^2 + m^2_{\mathrm{BA}}}, \lvert\vec{p}_{\mathrm{miss}}\rvert\hat{n}(\theta_{\mathrm{miss}}, \phi_{\mathrm{miss}})\right]$
		$p^\mu_{\mathrm{miss}} = p^\mu_{\gamma^*} + p^\mu_{\mathrm{BE}} - p^\mu_{\mathrm{X}} = [E_{\mathrm{miss}}, \lvert\vec{p}_{\mathrm{miss}}\rvert\hat{n}(\theta_{\mathrm{miss}}, \phi_{\mathrm{miss}})]$
eBABE	$p^\mu_{\gamma^*}$, p^μ_{BA}, p^μ_{BE}	$-t = (p^\mu_{\mathrm{corr}} - p^\mu_{\mathrm{BE}})^2$
		$p^\mu_{\mathrm{corr}} = (p^\mu_{\mathrm{BA}}[0], -p^\mu_{\gamma^*}[1], -p^\mu_{\gamma^*}[2], p^\mu_{\mathrm{BA}}[3])$
XBABE	p^μ_{X}, p^μ_{BA}, p^μ_{BE}	$-t = (p^\mu_{\mathrm{corr}} - p^\mu_{\mathrm{BE}})^2$
		$p^\mu_{\mathrm{corr}} = (p^\mu_{\mathrm{BA}}[0], -p^\mu_{\mathrm{X}}[1], -p^\mu_{\mathrm{X}}[2], p^\mu_{\mathrm{BA}}[3])$
eXBABE	$p^\mu_{\gamma^*}$, p^μ_{X}, p^μ_{BA}, p^μ_{BE}	$-t = (p^\mu_{\mathrm{corr}} - p^\mu_{\mathrm{BE}})^2$
		$p^\mu_{\mathrm{corr}} = \left[\sqrt{\lvert\vec{p}_{\mathrm{miss}}\rvert^2 + m^2_{\mathrm{BA}}}, \lvert\vec{p}_{\mathrm{miss}}\rvert\hat{n}(\theta_{\mathrm{BA}}, \phi_{\mathrm{BA}})\right]$
		$p^\mu_{\mathrm{miss}} = p^\mu_{\gamma^*} + p^\mu_{\mathrm{BE}} - p^\mu_{\mathrm{X}} = [E_{\mathrm{miss}}, \lvert\vec{p}_{\mathrm{miss}}\rvert\hat{n}(\theta_{\mathrm{miss}}, \phi_{\mathrm{miss}})]$

Mandelstam 't' - BABE Method

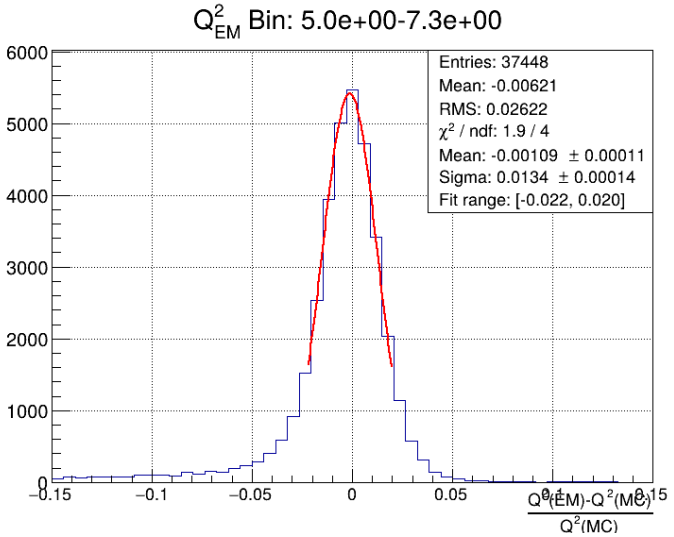


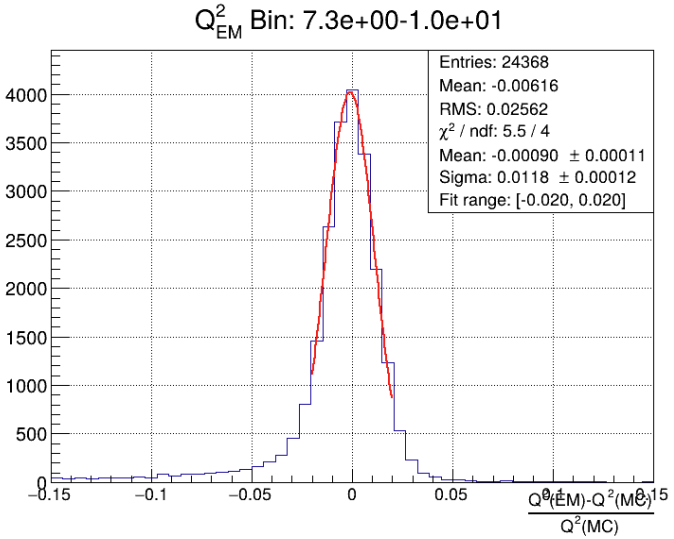


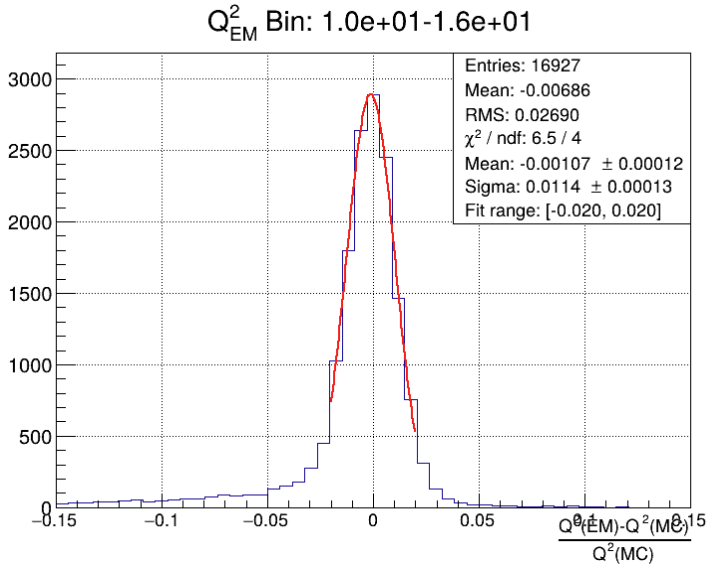
't' correlation plot
cyan = RP
blue = B0

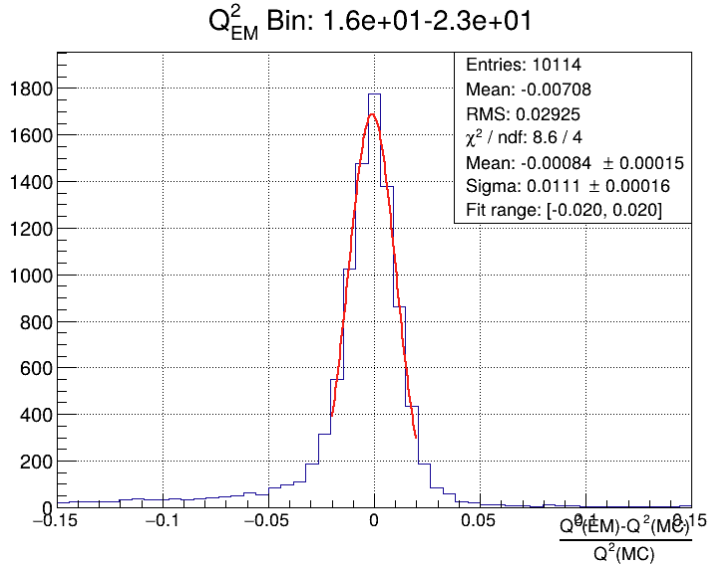


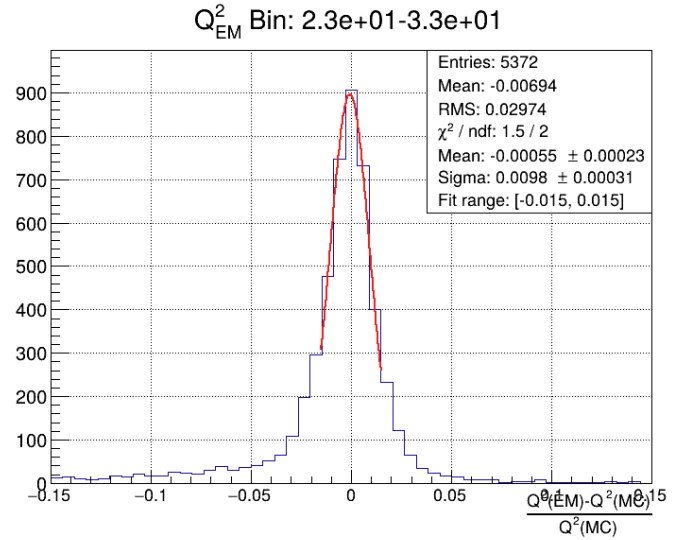
Resolution plots – Electron Method

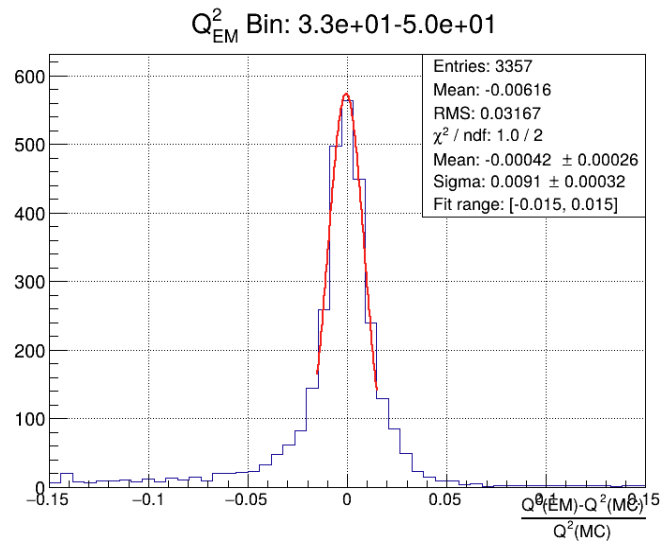




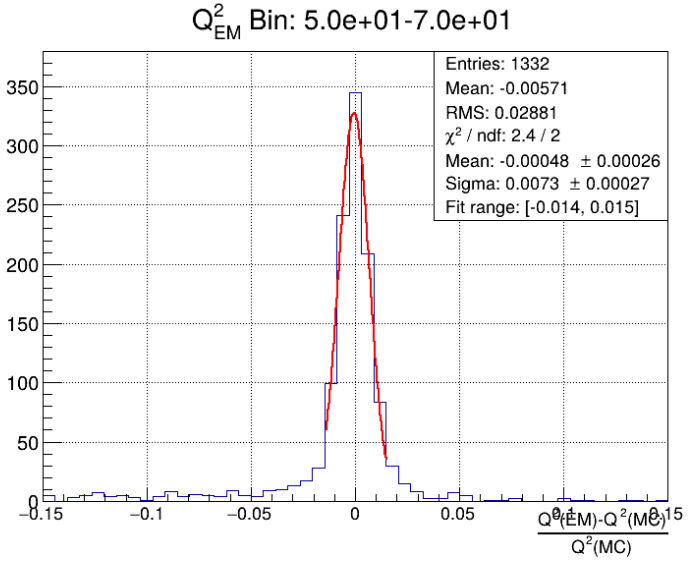


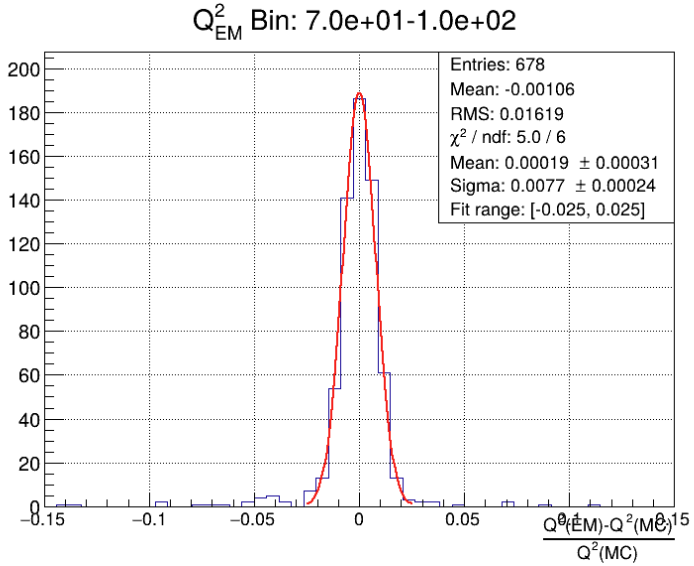


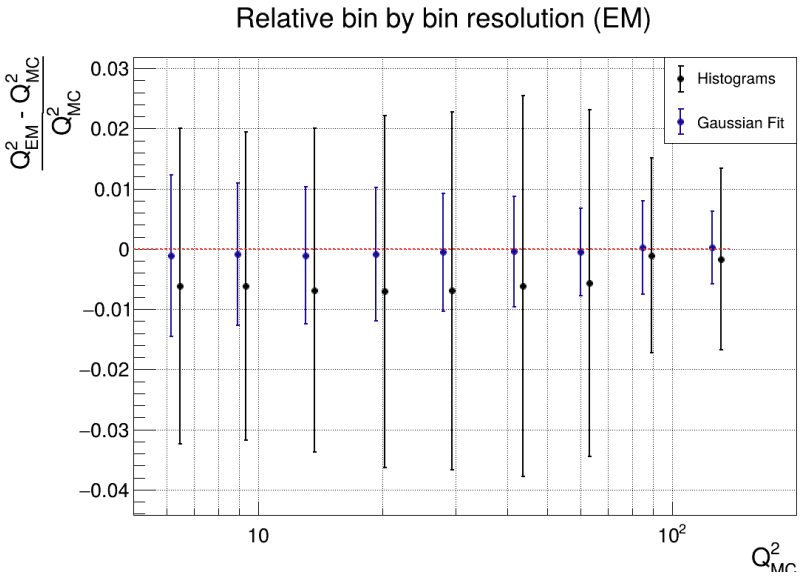


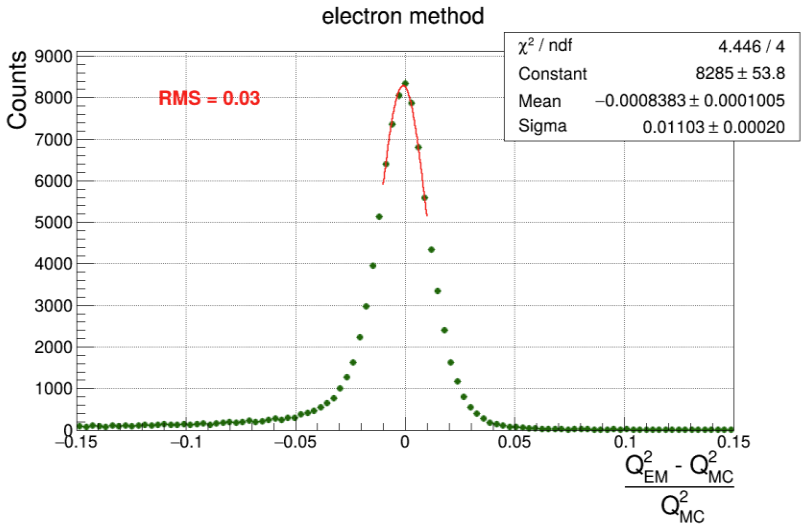


Resolution plots EM

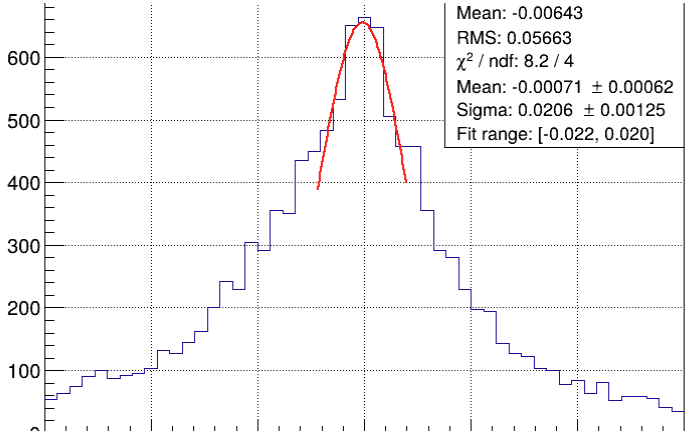


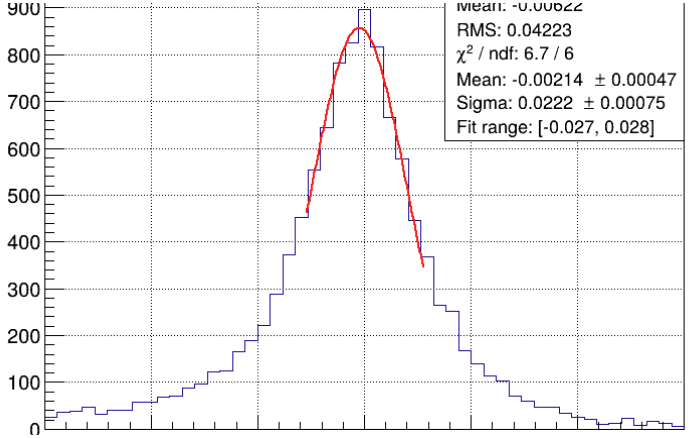


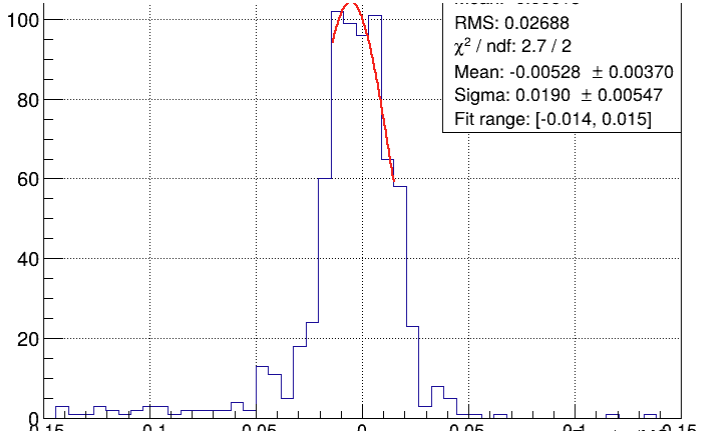


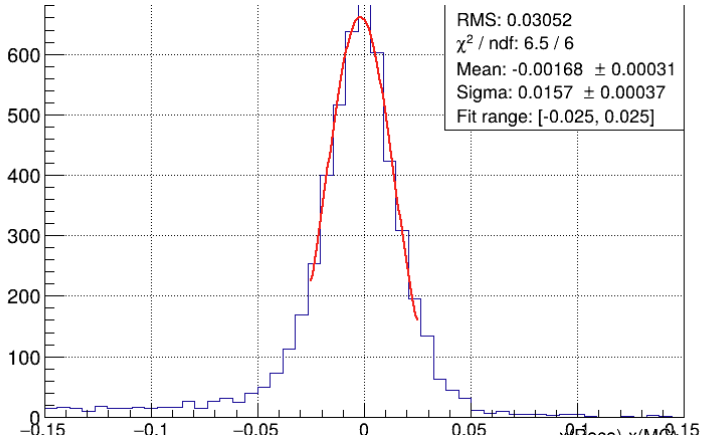


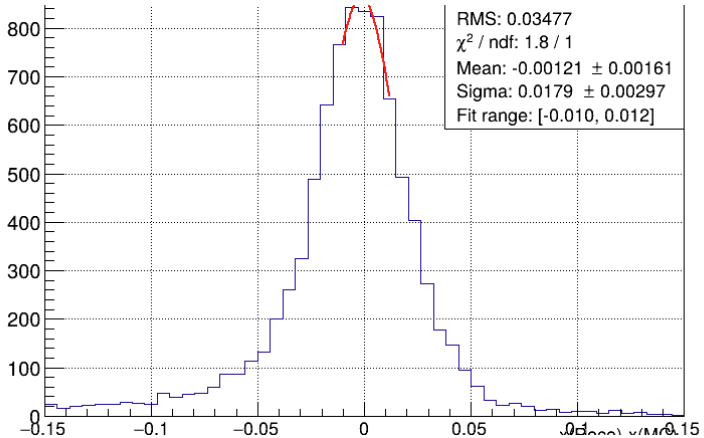
Resolution plots EM

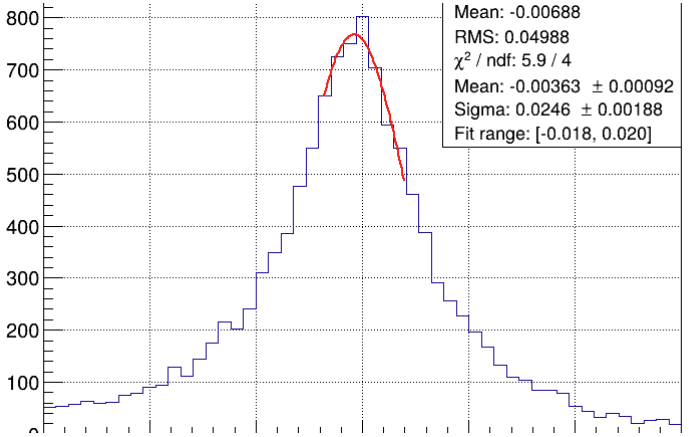






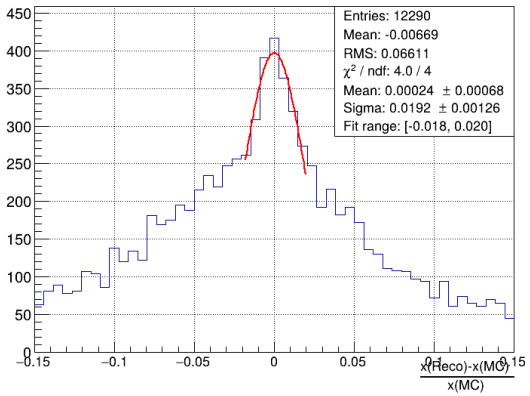




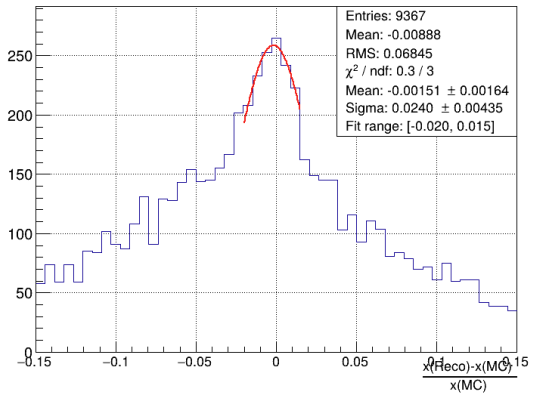


Resolution Plots EM

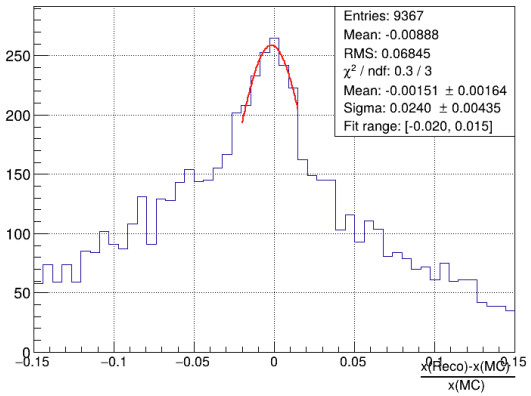
x_{EM} Bin: 1.7e-02-2.5e-02



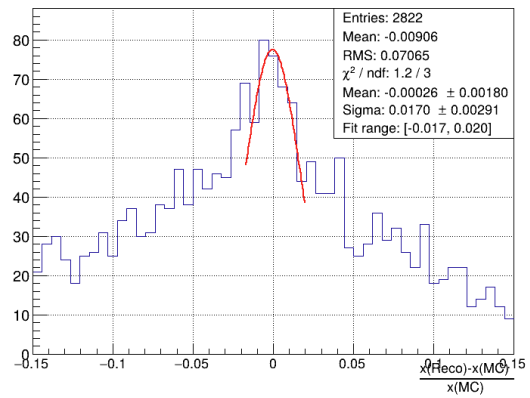
x_{EM} Bin: 2.5e-02-3.6e-02



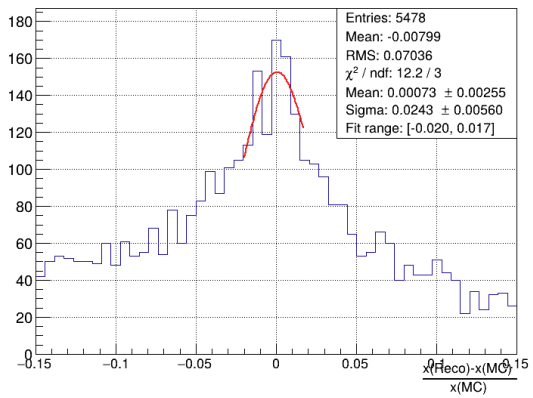
x_{EM} Bin: 2.5e-02-3.6e-02



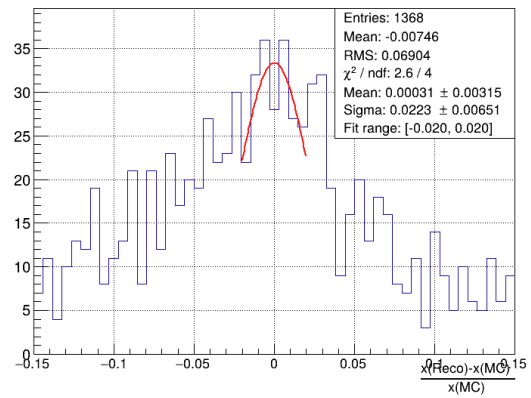
x_{EM} Bin: 5.2e-02-7.6e-02



x_{EM} Bin: 3.6e-02-5.2e-02

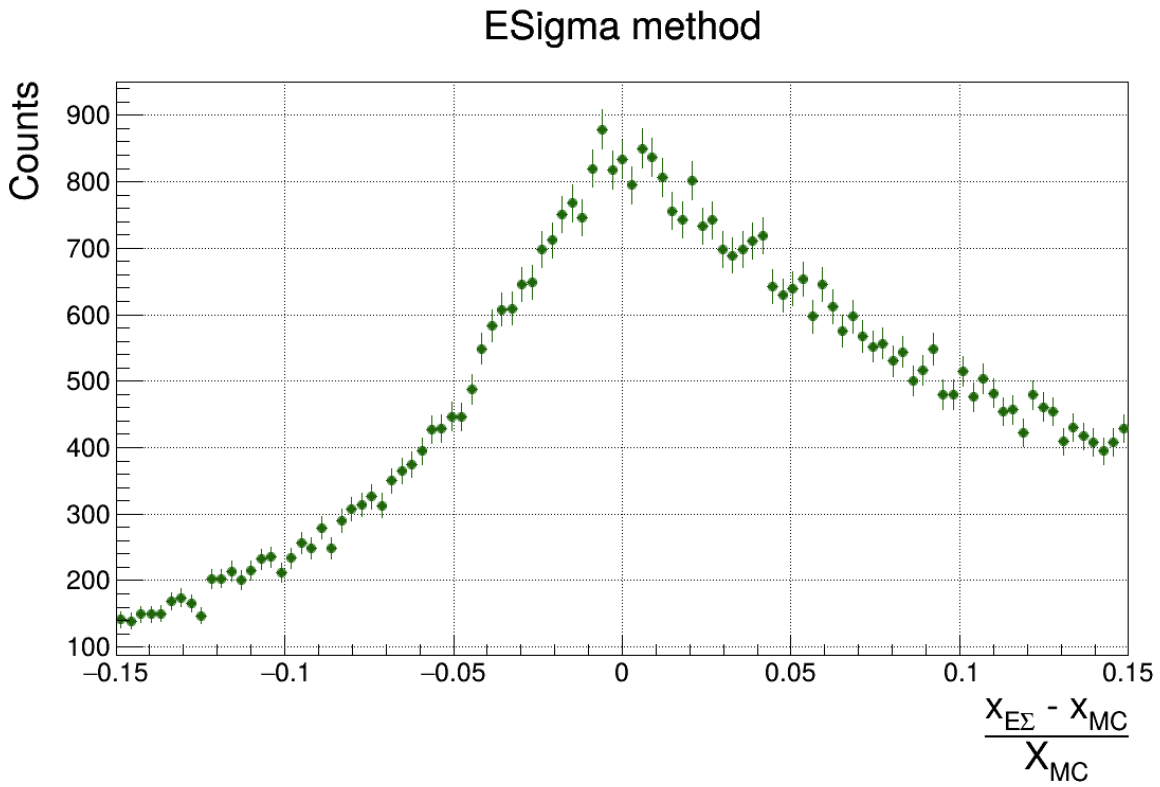


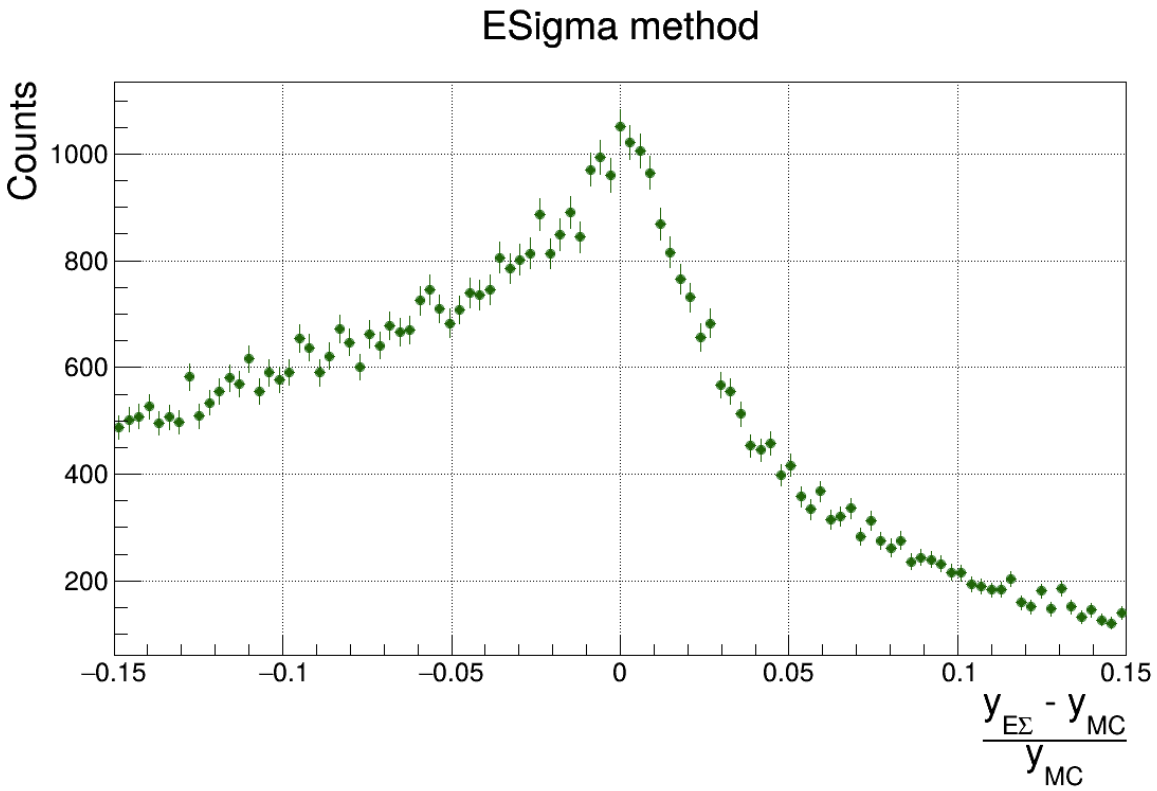
x_{EM} Bin: 7.6e-02-1.1e-01



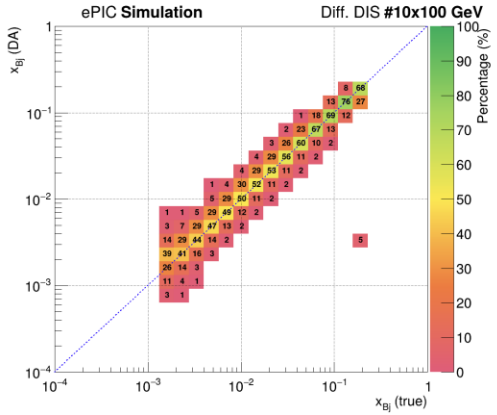
Resolution plots ESigma method

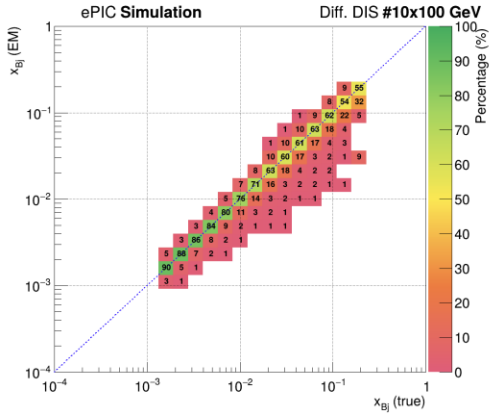
Q2 is exactly same as EM

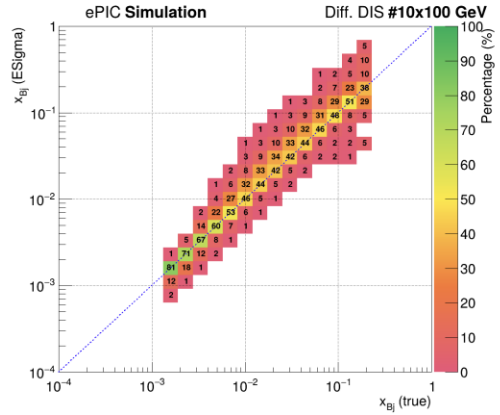


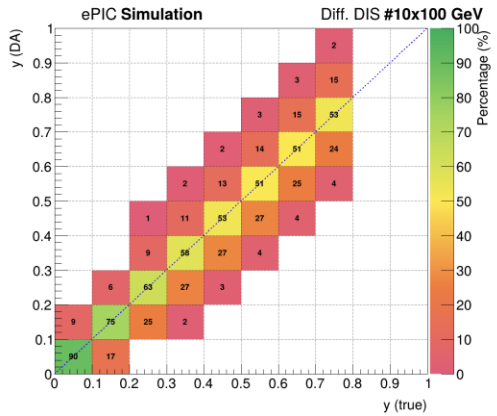


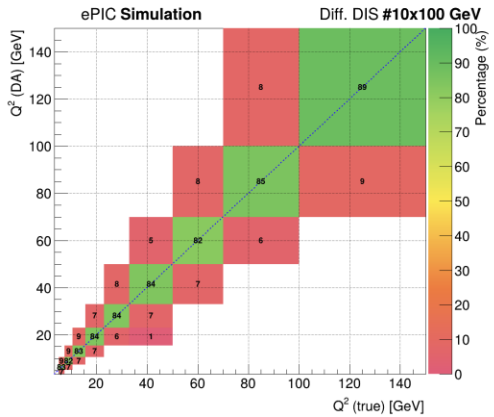
Response Matrices

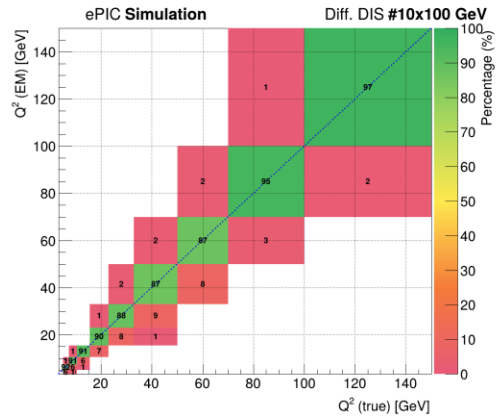




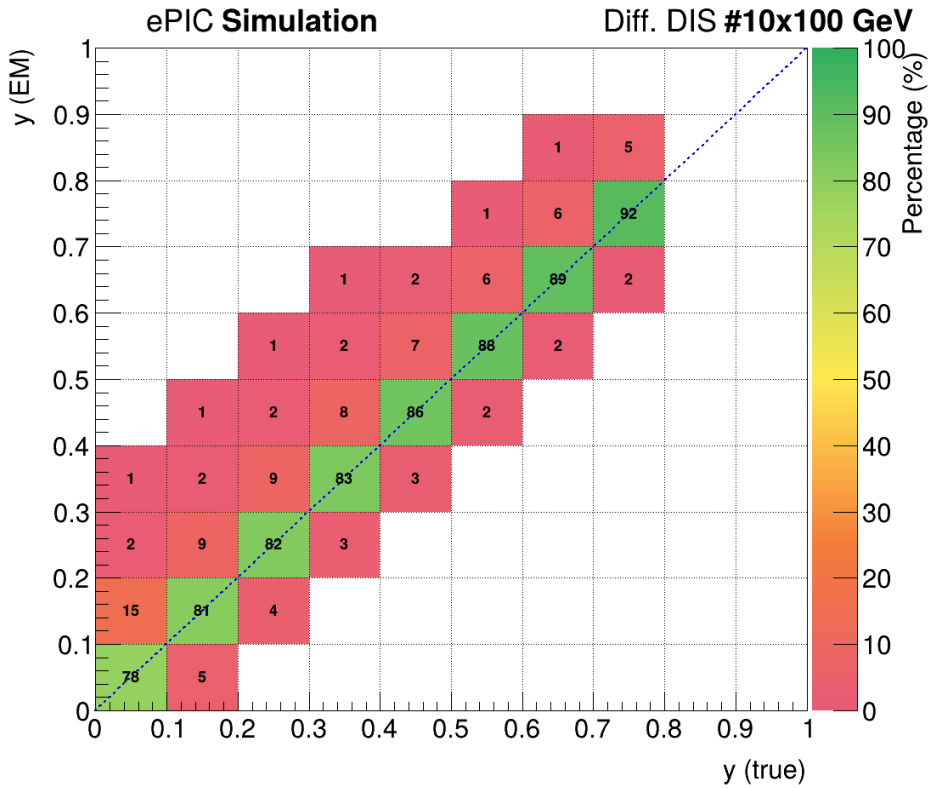


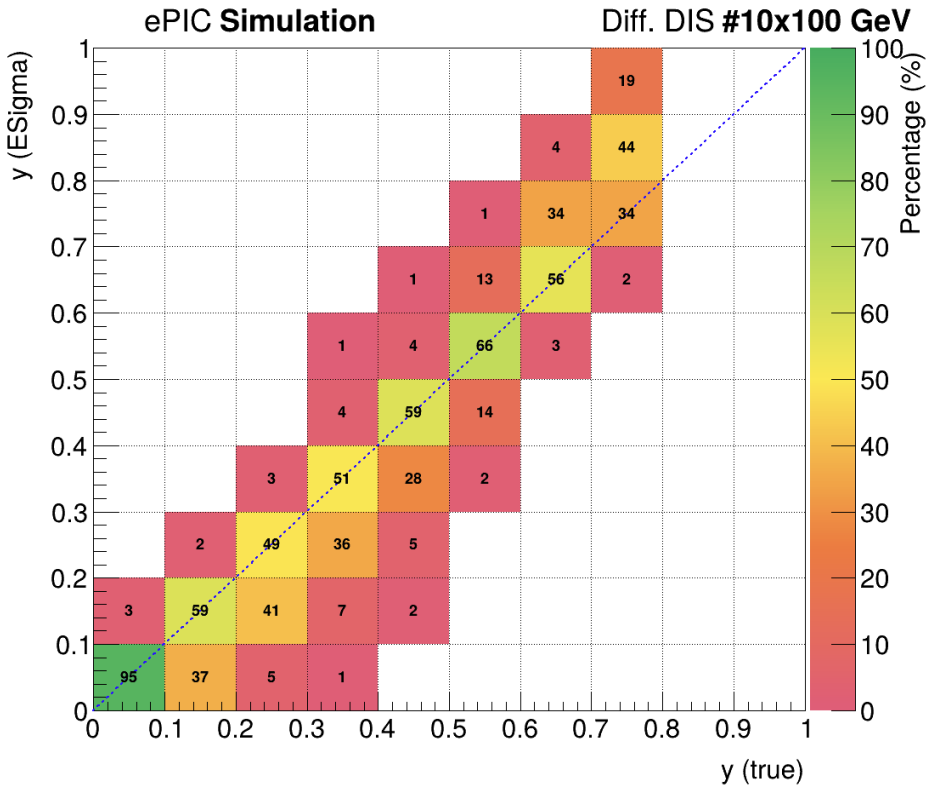






Response matrices - 2





't' resolution BABE and Res. Mat.