

$b \rightarrow e, b \rightarrow D^0$ decay

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$b \rightarrow e, D0$ decay

- Monte Carlo直接模拟

精确; 速度慢

- 直接计算

- B的pt有一分布, y 有一分布 $\rightarrow$ B的动量 $\mathbf{q}$ 分布 $f(\mathbf{q})$
- 电子在静止系下动量 $\mathbf{p}'$ 的分布为Formfactor已知 $\rightarrow$ (Lorentz变换, 参数为 q) $\rightarrow$ 在实验室系分布 $F(\mathbf{p}|\mathbf{q}) \rightarrow$ 积分

精确, 快速

- Monte Carlo画出pt(parent) vs pt(daughter)的TH2D

- 然后改变母粒子谱, 把这个二维分布的每个bin乘以两个谱在bin x 处的比值, 然后ProjectionY得到新的子粒子谱

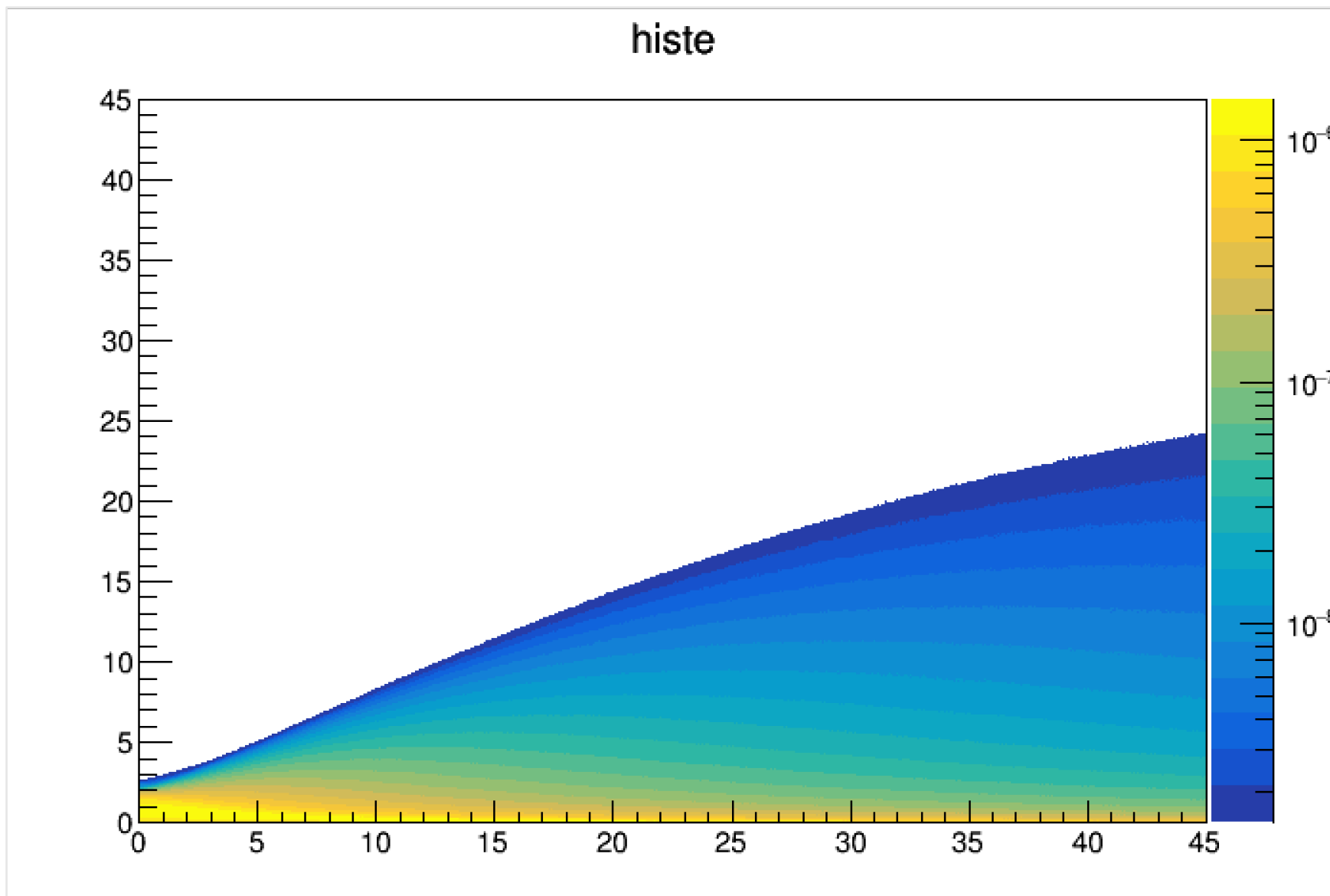
快速; 精度不确定

decay结果

With PYTHIA decayer

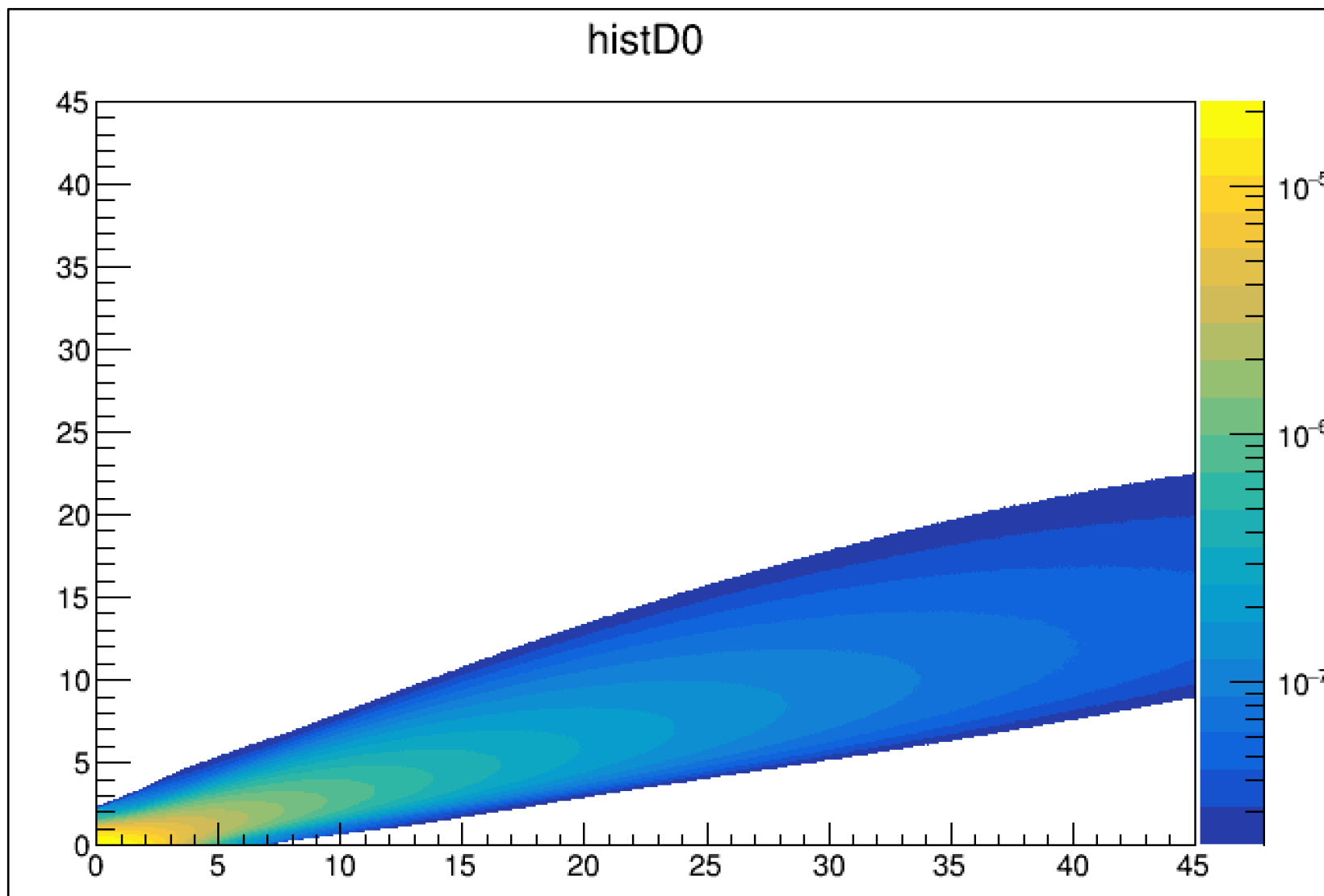
b2e TH2D

ptmax = 45
nbins = 2500

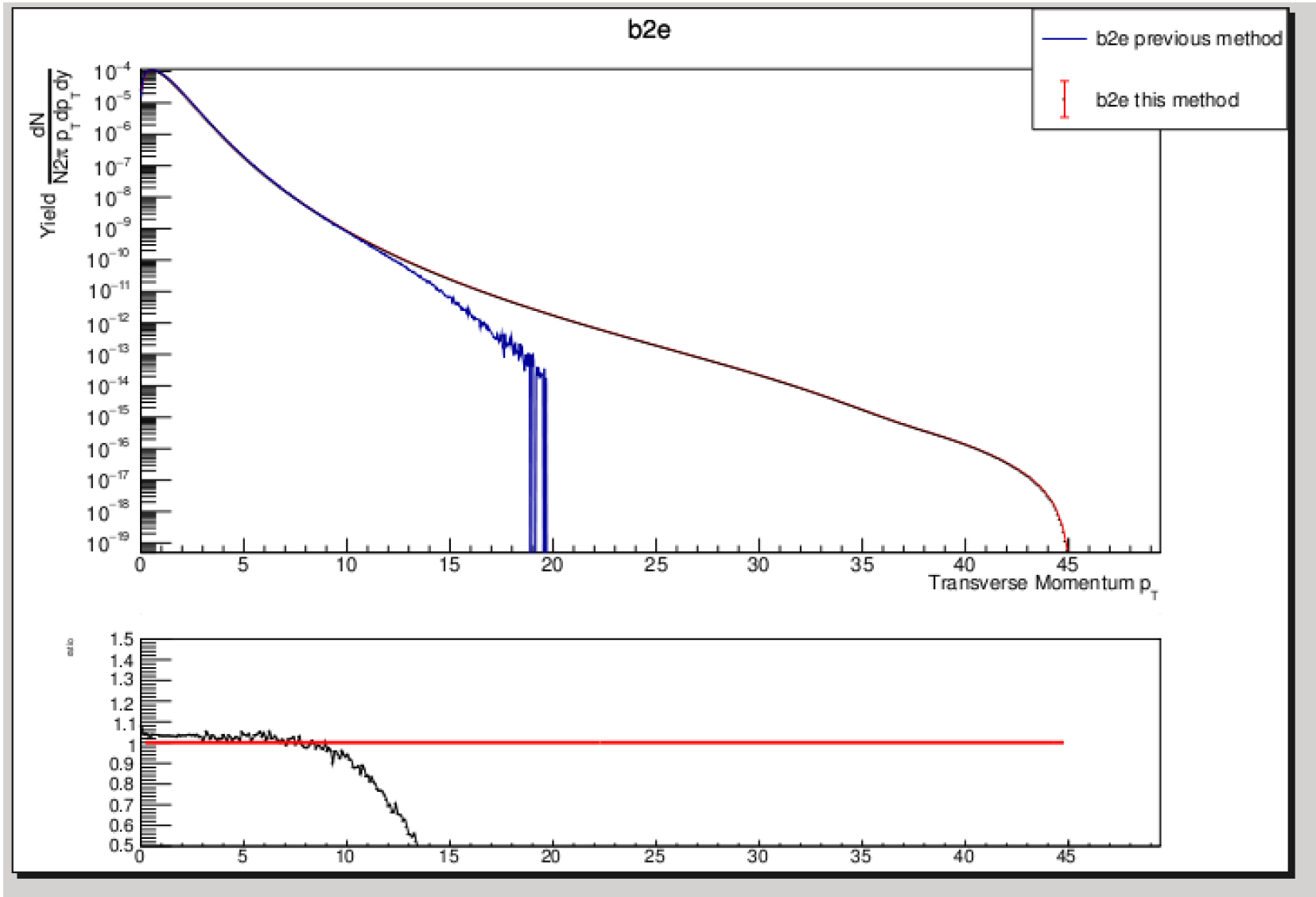


b2D0 TH2D

ptmax = 45
nbins = 2500



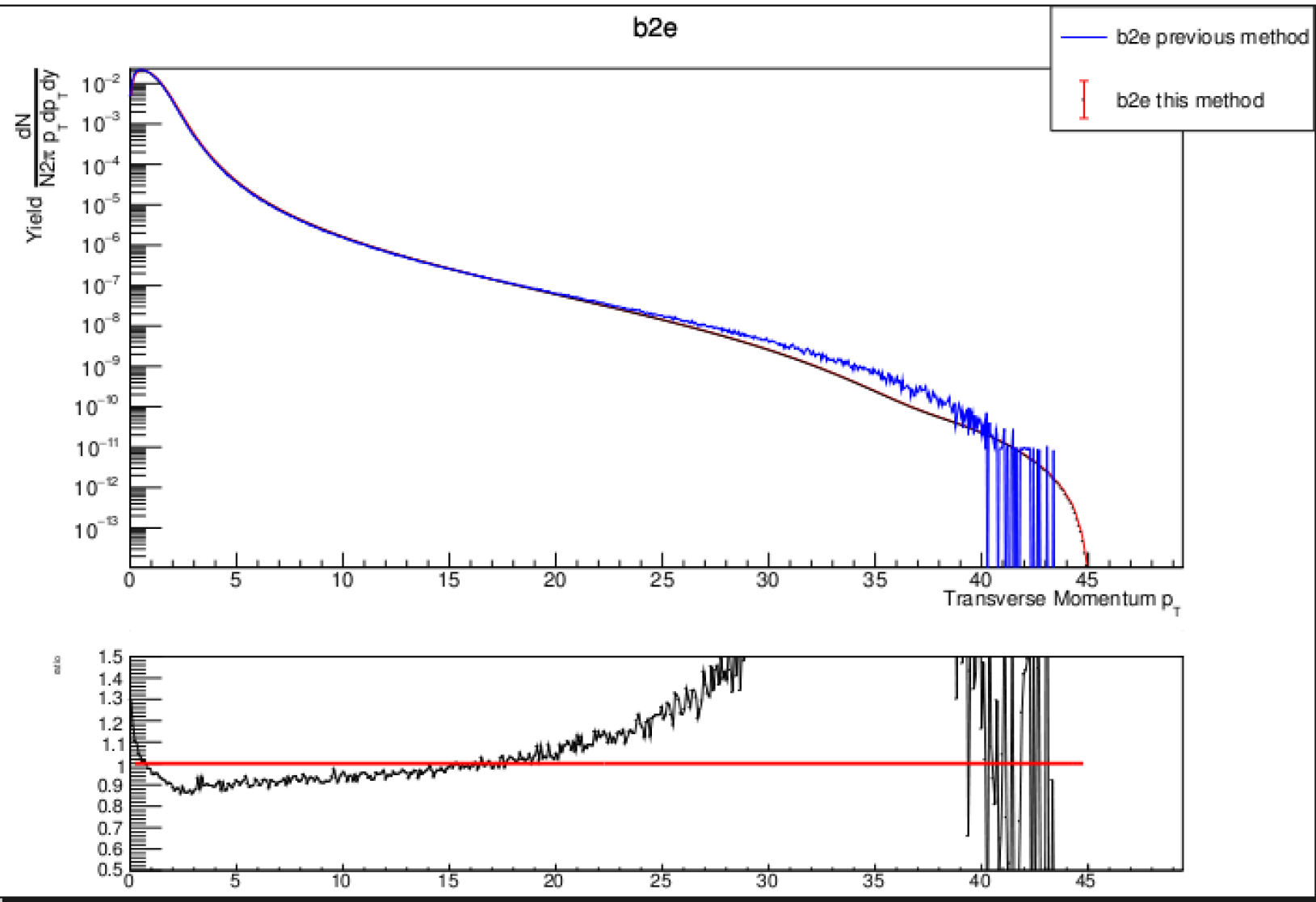
b2e this method vs previous MC(PYTHIA)



Previous ptmax = 45

b2e this method vs Fansi MC

Using Formfactor



b2D0 this method vs previous MC

