

# Open Charm at the EIC



**Matthew Kelsey**

Wayne State University



k = replica index

48 error sets for EPPS16\_Au (20 for nPDF part and 18 for CT14NLO[not used])

$$f_k \equiv f_{S_0} + \sum_i^{N_{\text{eig}}} \left( \frac{f_{S_i^+} - f_{S_i^-}}{2} \right) R_{ik}$$

$$\omega_k^{\text{GK}} = \frac{\exp[-\chi_k^2/2]}{(1/N_{\text{rep}}) \sum_{k=1}^{N_{\text{rep}}} \exp[-\chi_k^2/2]}$$

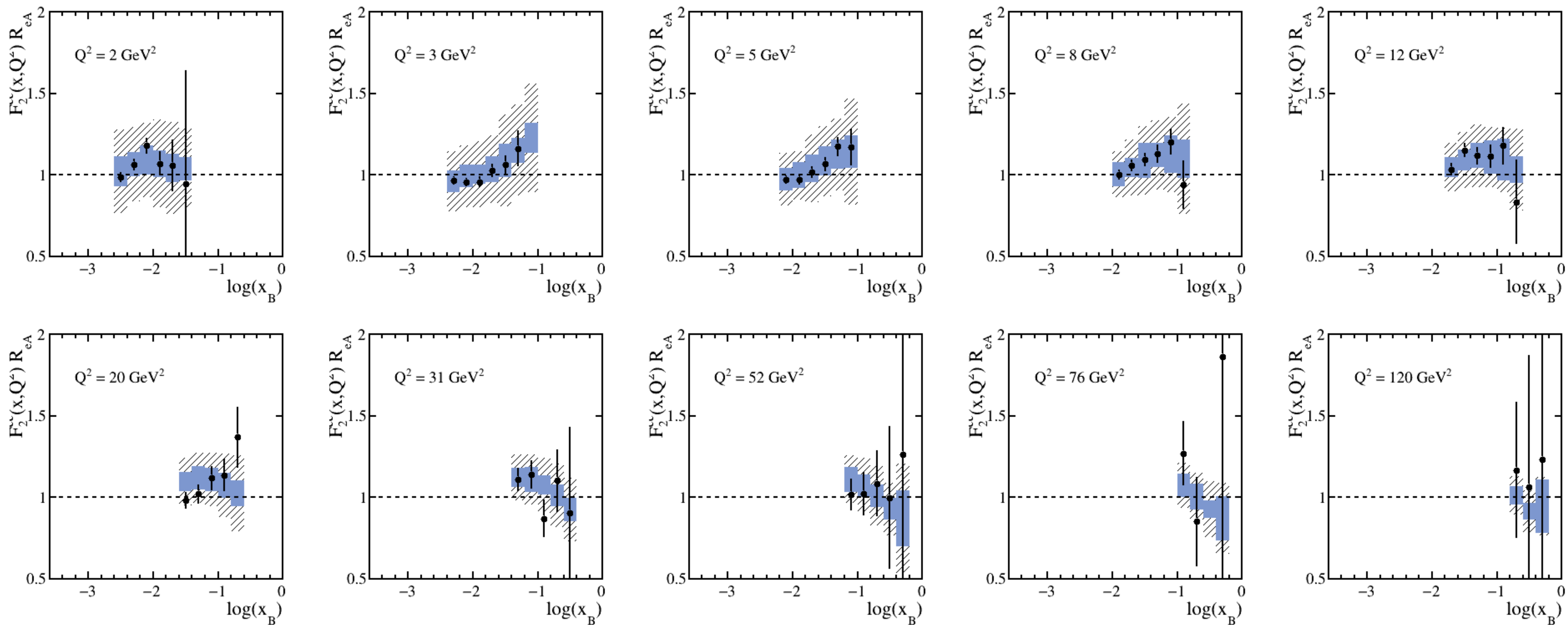
$$f_{\text{new}} = f_{S_0} + \sum_i^{N_{\text{eig}}} \left( \frac{f_{S_i^+} - f_{S_i^-}}{2} \right) \left( \frac{1}{N_{\text{rep}}} \sum_k^{N_{\text{rep}}} \omega_k R_{ik} \right)$$

Using photon-gluon fusion events exclusively, re-weighted to conserve estimated cross-section (and errors) in 10x100 and 5x41 collisions

Scaling error bars to 1 fb<sup>-1</sup>; removed points with rel. error >40%

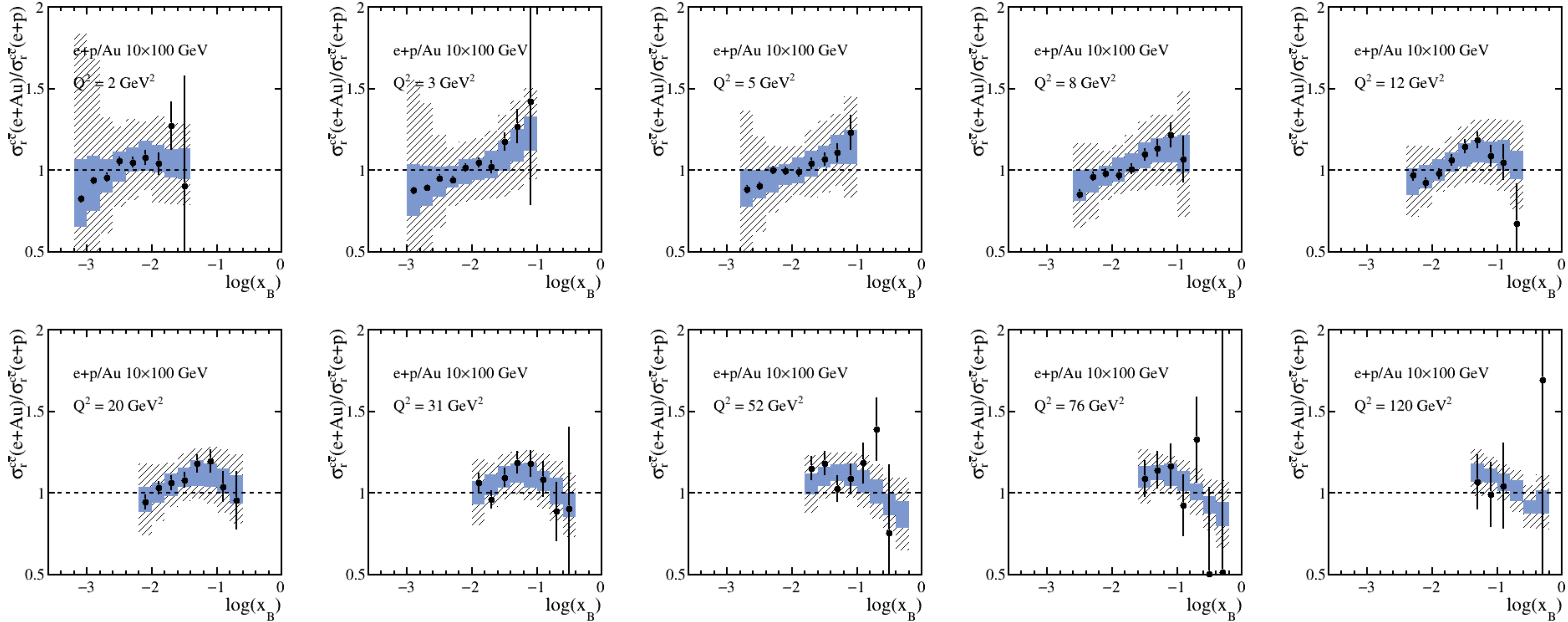
Randomly displace data points from central value by statistical errors

# Charm F2 Ratios

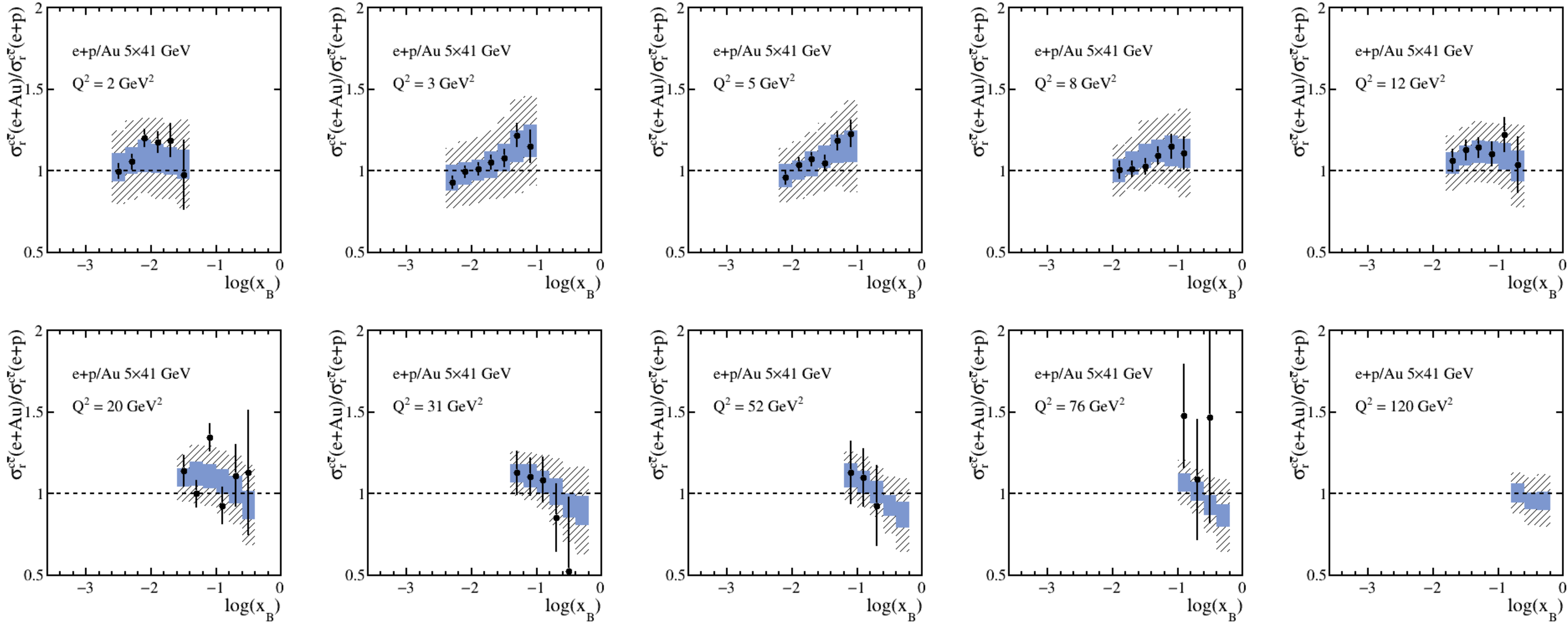




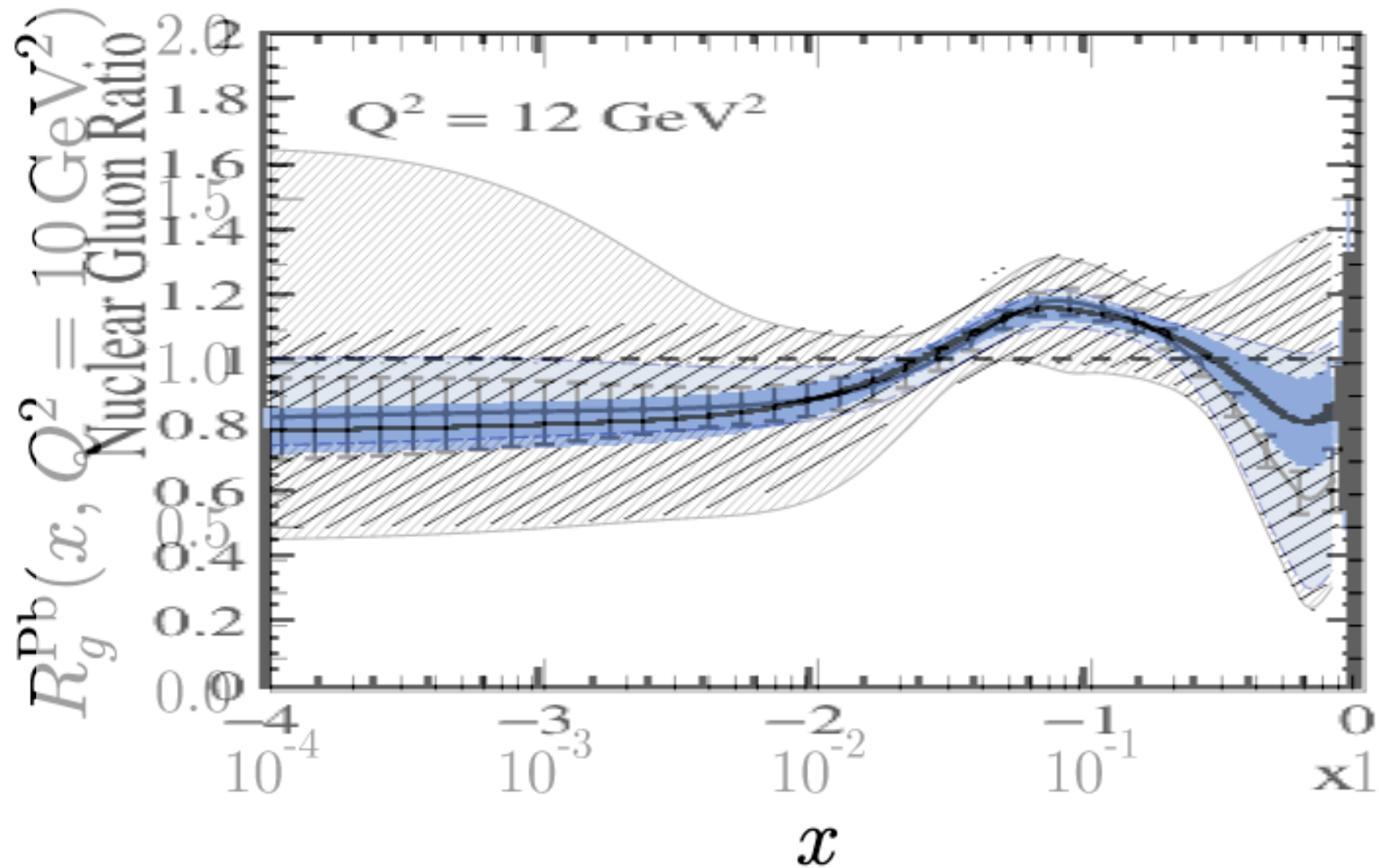
# X-sec 10x100 Ratios



# X-sec 5x41 Ratios



BACKUP



Very poor comparison (will extract data from plots). But final PDF uncertainties in larger  $x$  region comparable