

Scaled Momentum Spectra in the Target Region of the Breit Frame

Status Report

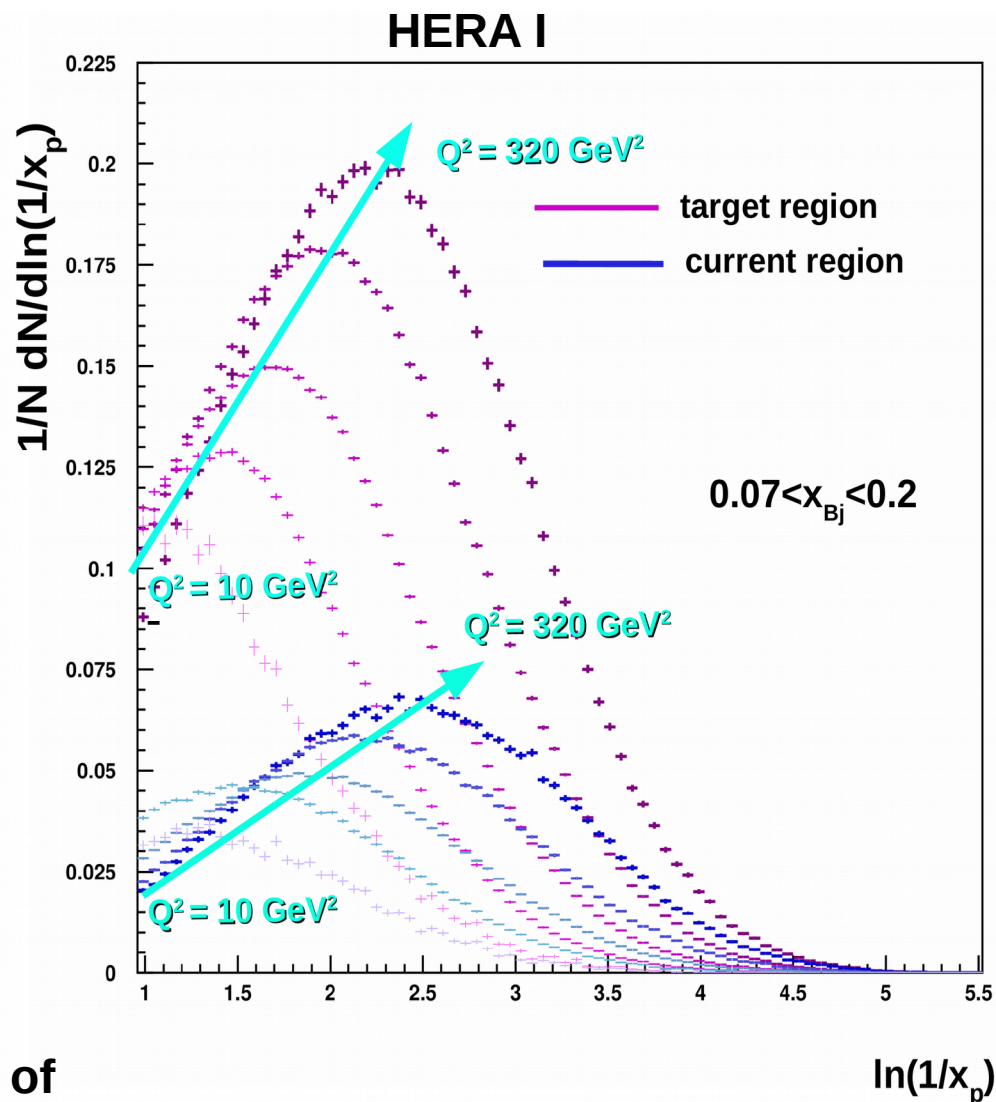
Nick Brook, Corinna Catterall, Lydia Shcheglova

- scaling violation in the target region ?

- fit of the shape of the $\ln(1/x_p)$ distribution to study X, Q^2 dependence of the peak position



- FF study needs data analysis over a wide range of Q^2 and X .

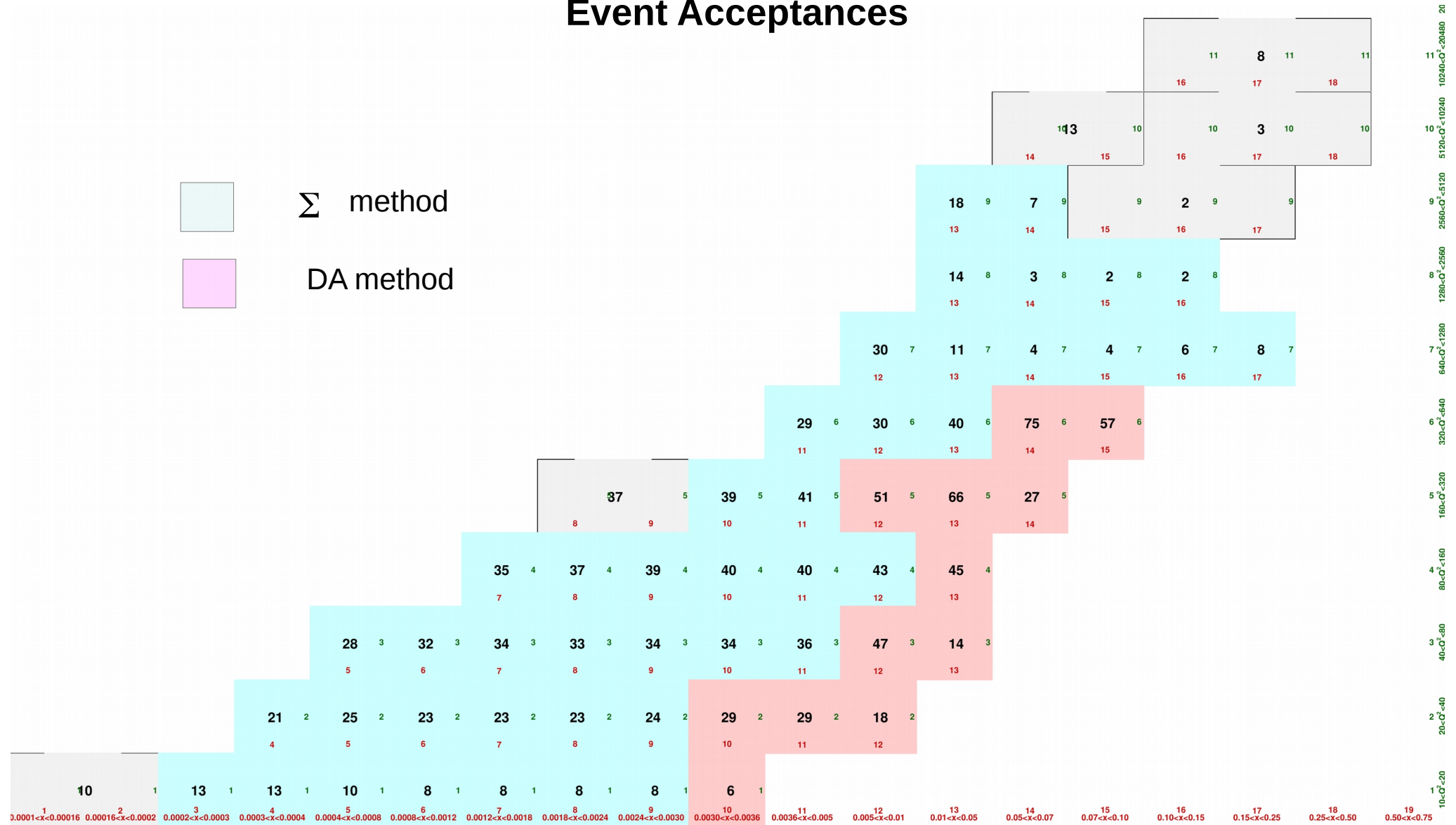
- more rapid increasing of the maxima of $\ln(1/x_p)$ distributions in the target region compared to those in the current region



$$X_p = \frac{p^{Breit}}{p_{max}}$$



Event Acceptances

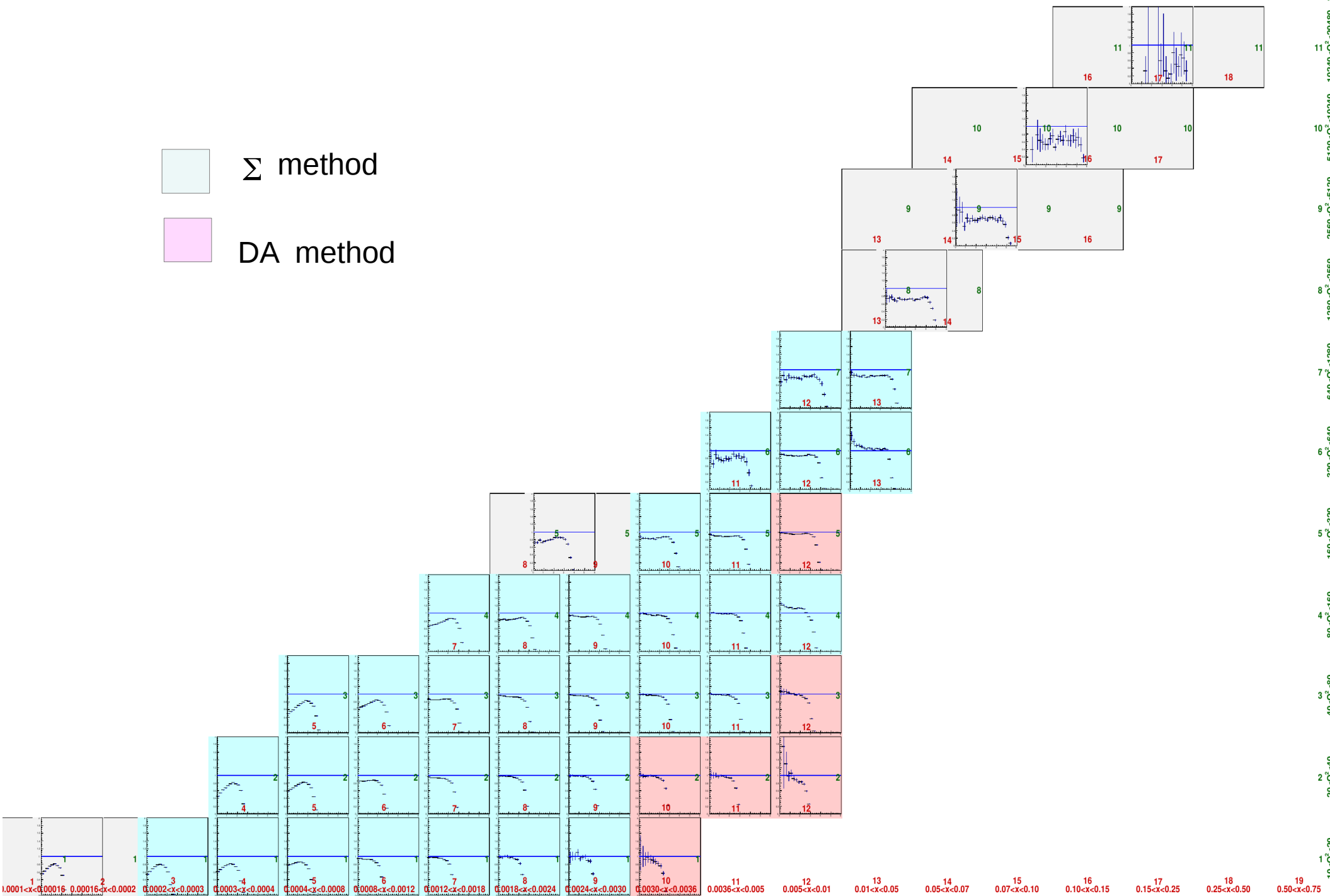
 Σ method
 DA method



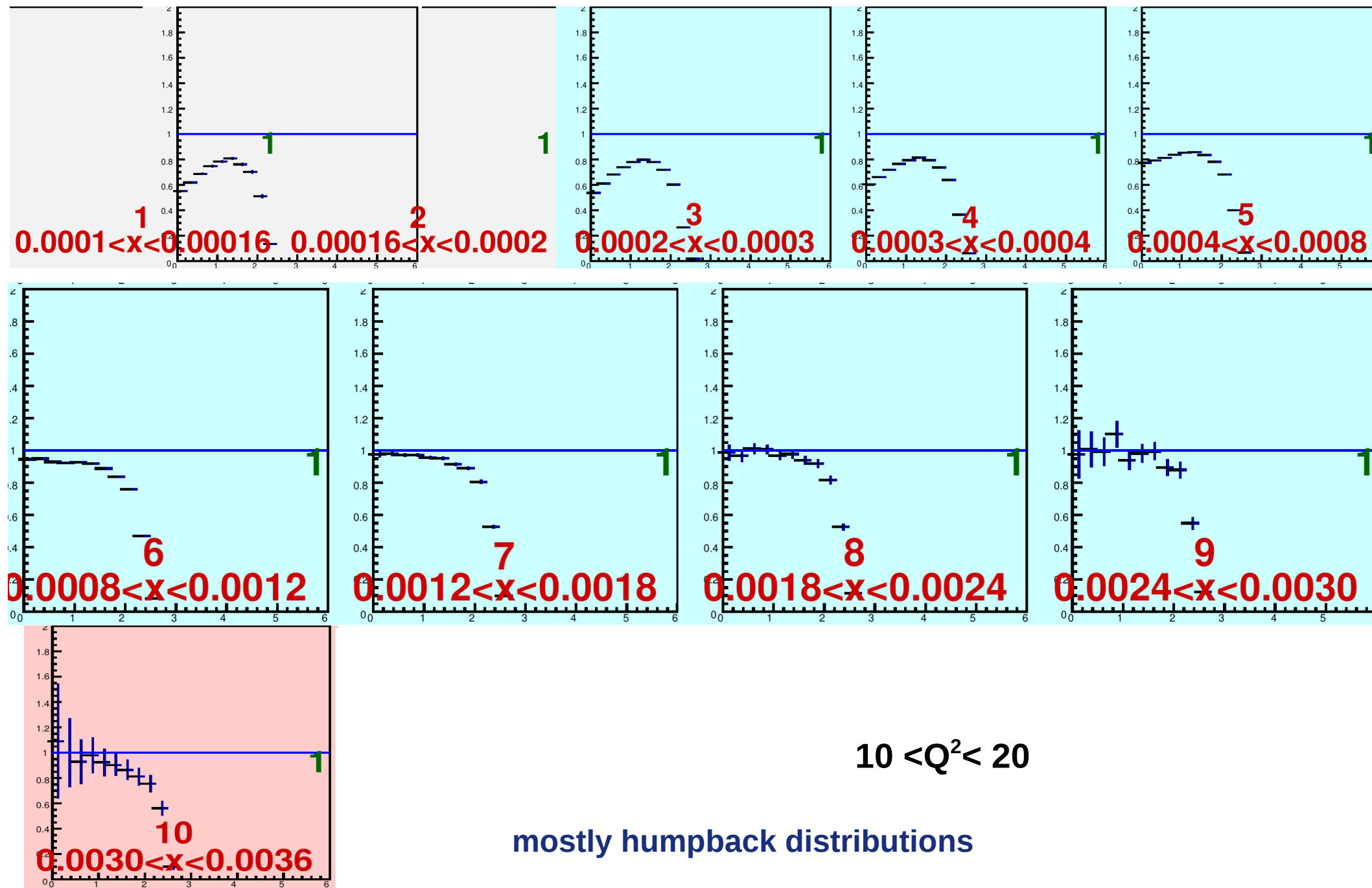
$$A(\%) = \frac{\text{No. of events satisfying kinematic cuts}}{\text{No. of events generated in that bin}}$$

Track acceptances

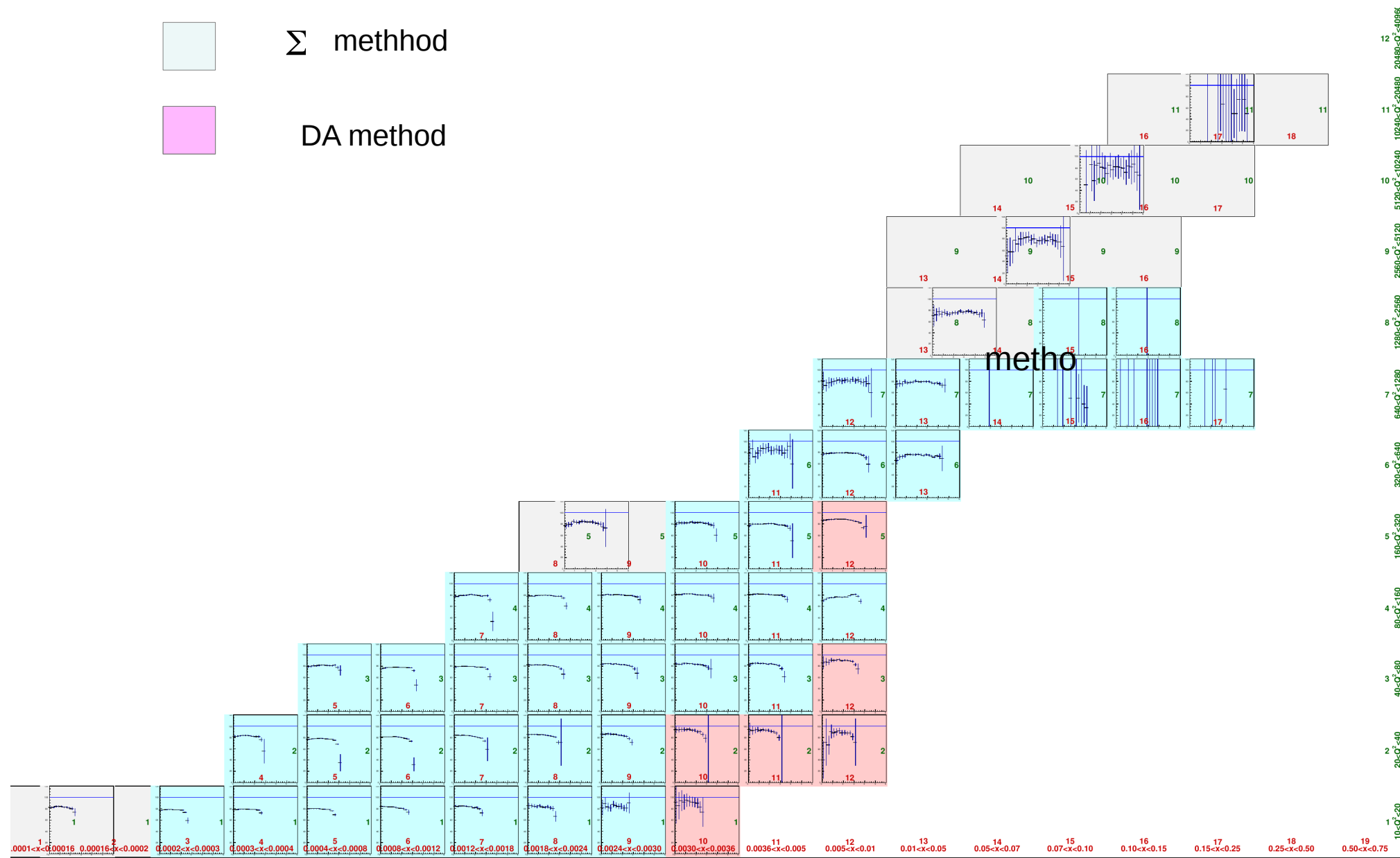
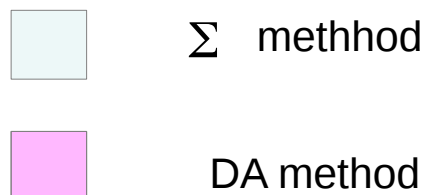
 Σ method
 DA method



Track Acceptances



Track Purity



Jane Bromley,
Thesis

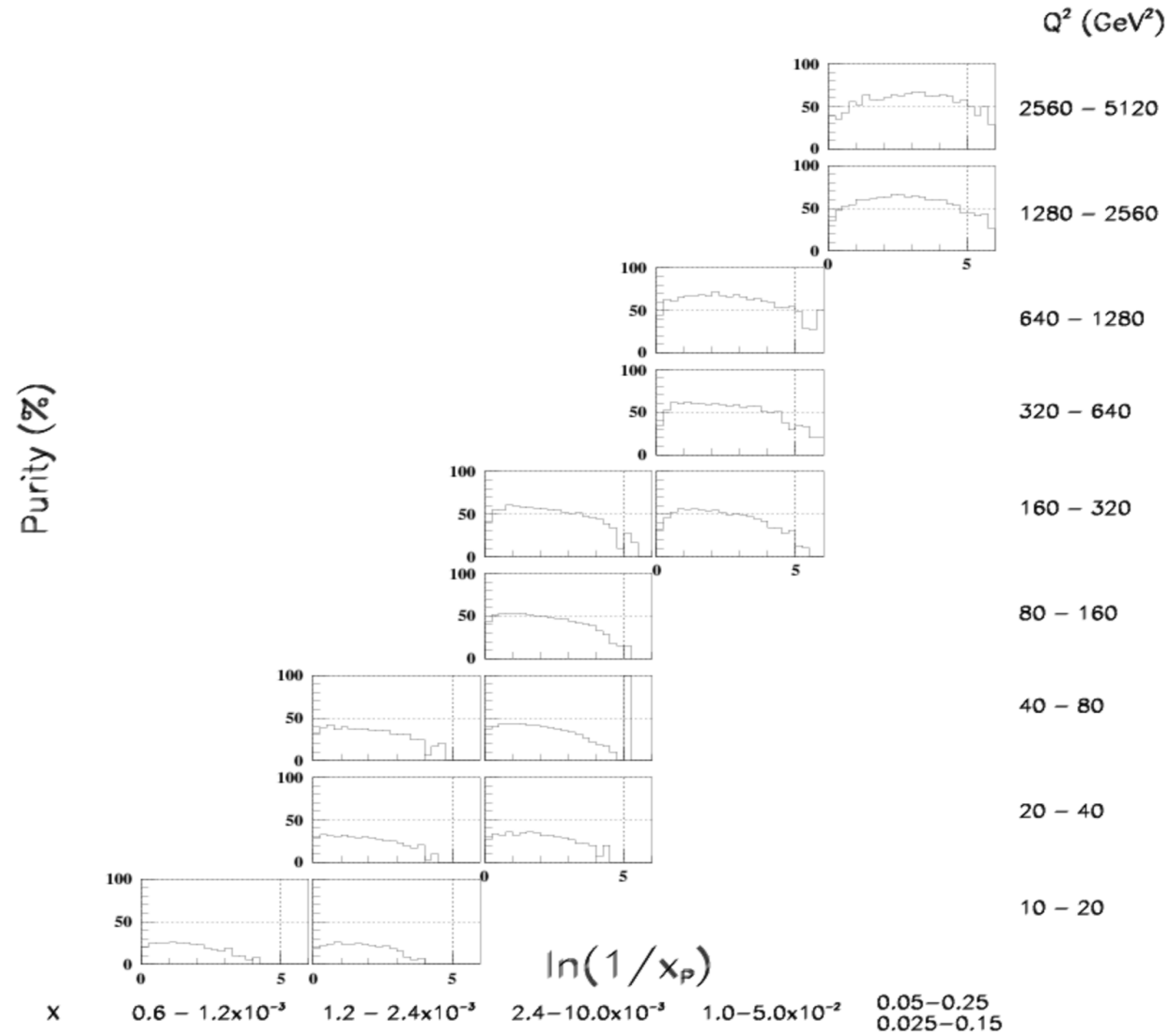


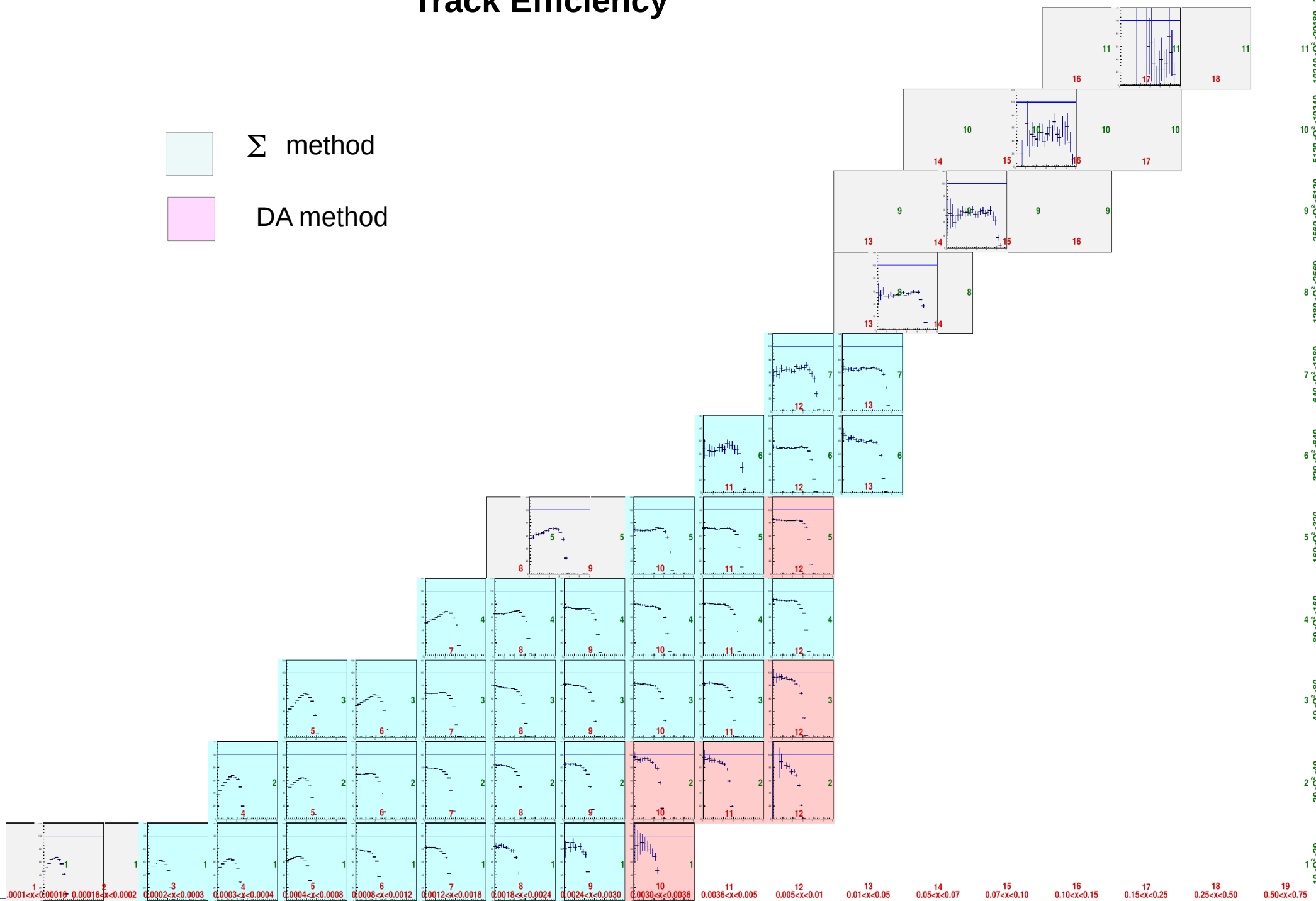


Figure 6.12: The purity in the measurement of $\ln\left(\frac{1}{x_p}\right)$ in the analysis (x, Q^2) bins.

Track Efficiency

 Σ method
 DA method



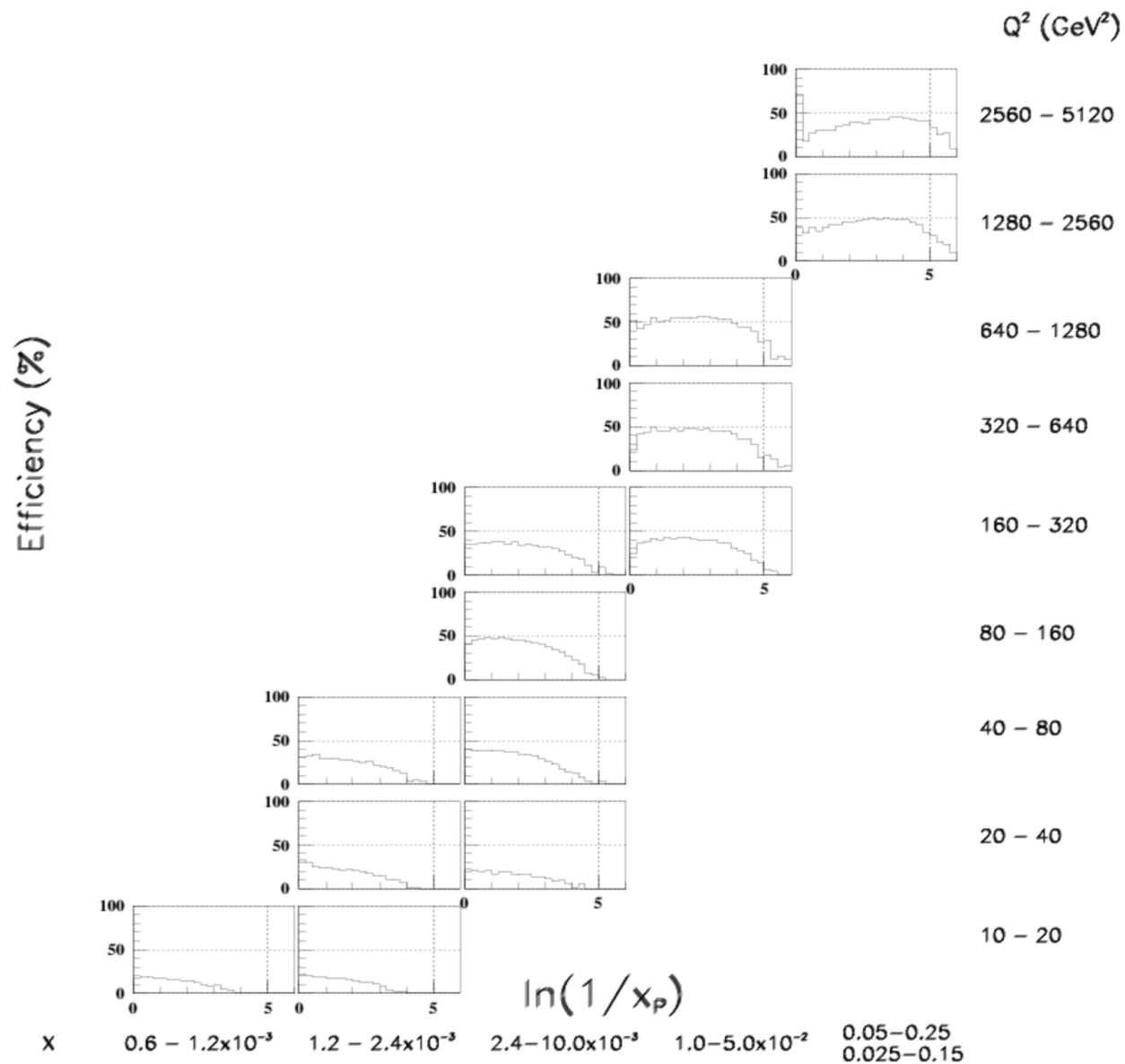


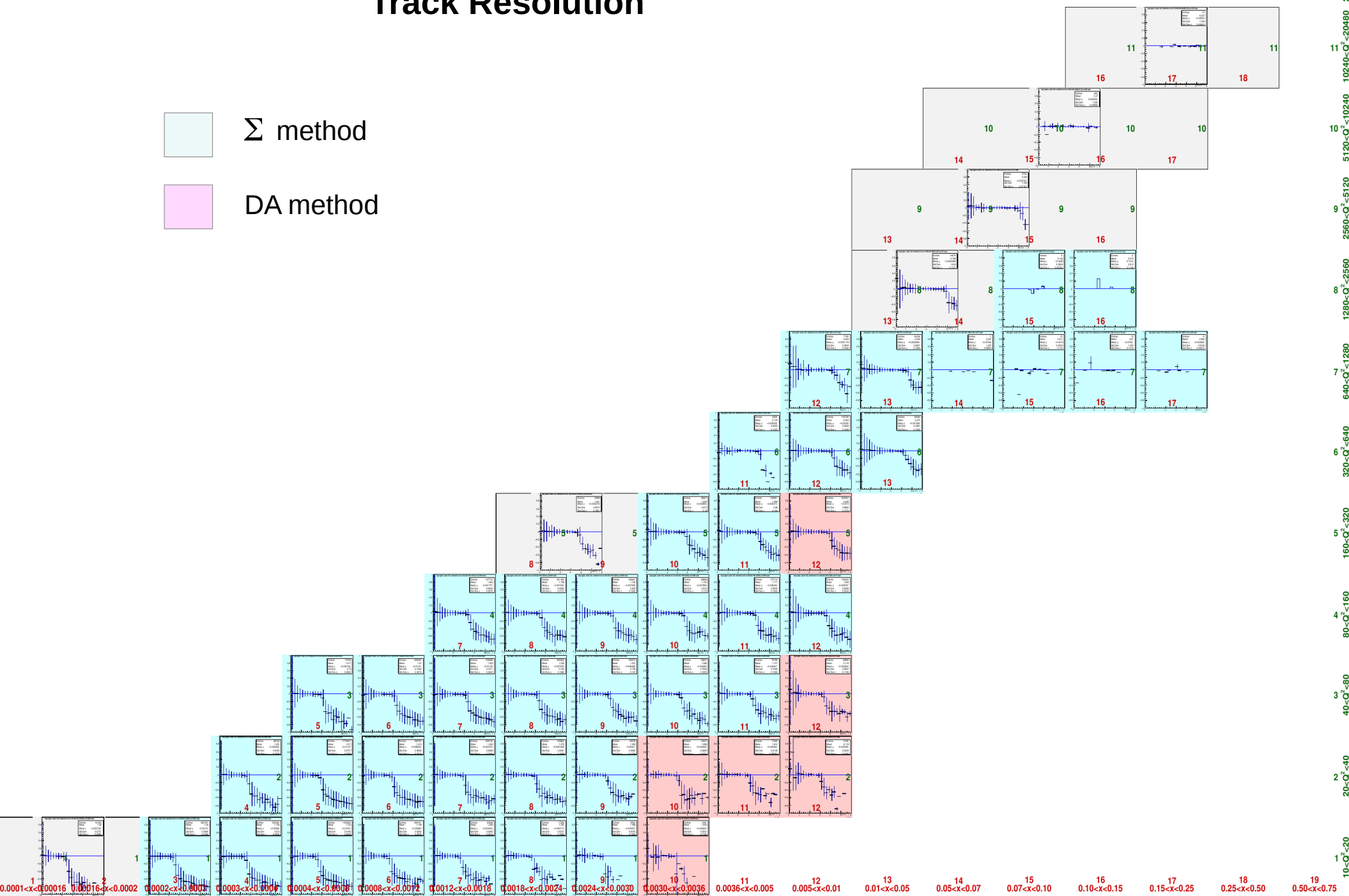


Figure 6.13: The efficiency in the measurement of $\ln\left(\frac{1}{x_p}\right)$ in the analysis (x, Q^2) bins.

Track Resolution

 Σ method

 DA method



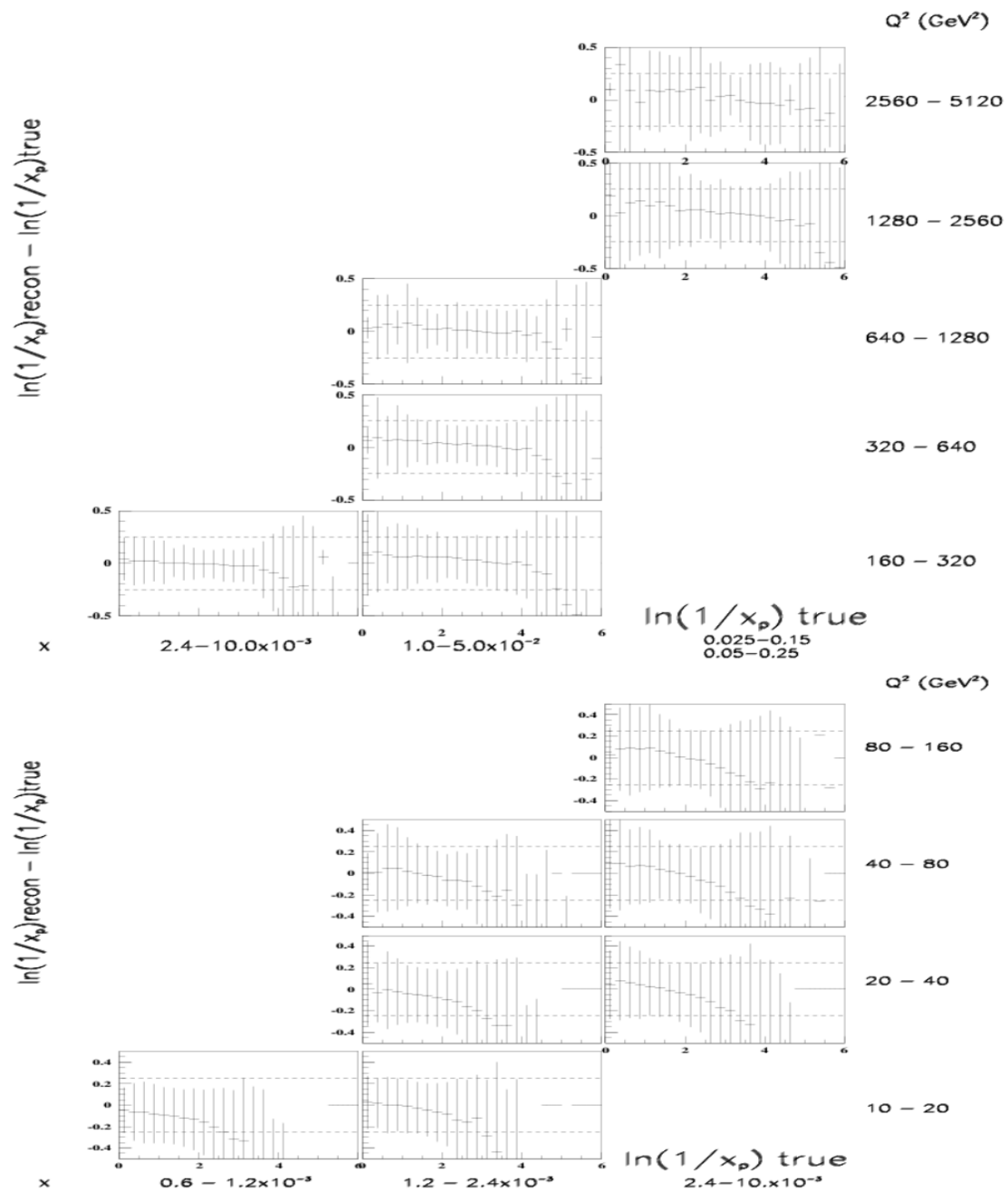


Figure 6.9: The resolution in the measurement of $\ln\left(\frac{1}{x_p}\right)$.