# Discussion:

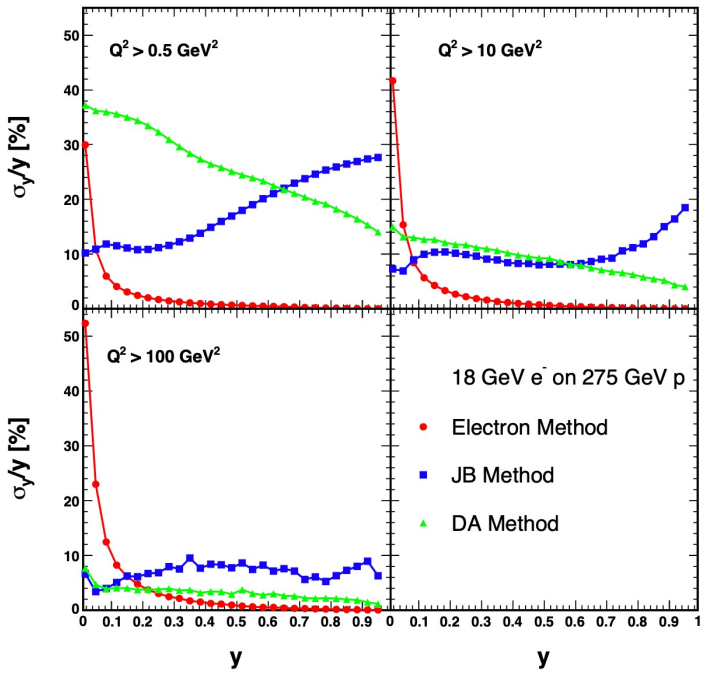
# Inclusive Group Plots for Proposal

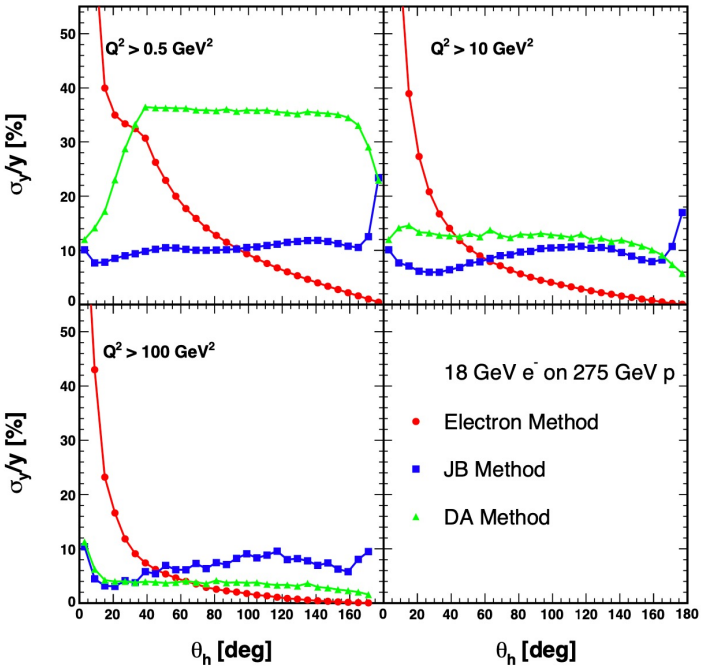
## (see also previous discussion sessions at meetings on 23 August and 20 September)

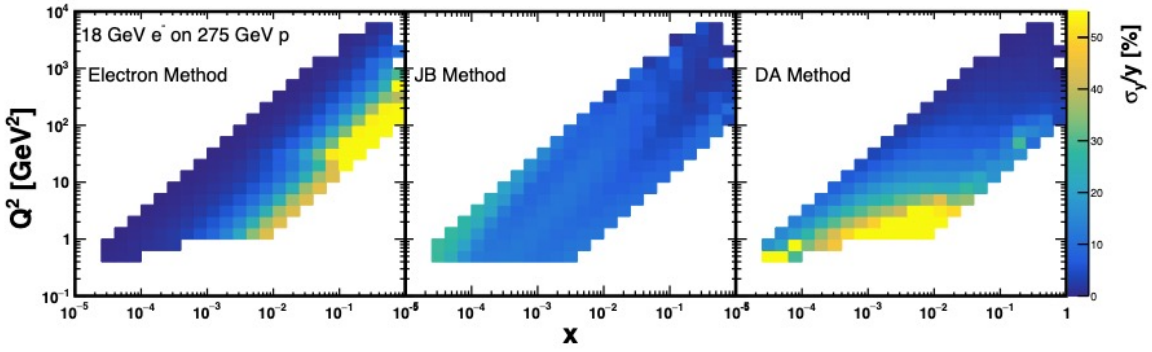
With deadline approaching fast, we need to converge on pragmatic solutions …

# 1) Resolution on Kinematic Variables

- Different / new ideas on presentation (see Barak's talk)



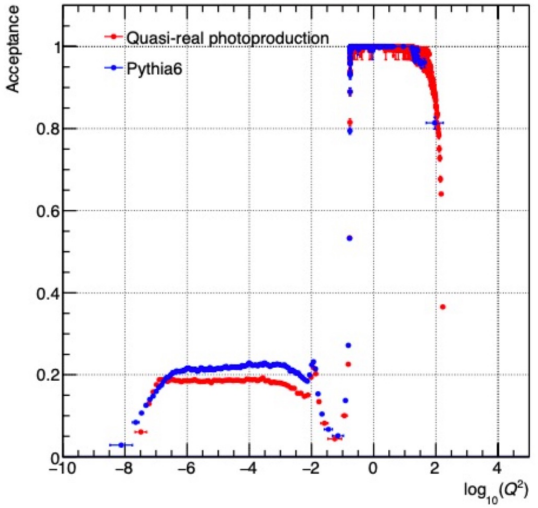




- Other mixed methods
- Hadron treatment?
- Electron ID from truth?
- Fastsim v Fullsim?

# 2) Electron ID performance

Original plans …

- Electron acceptance as function of $Q^2$?




- Electron ID – background suppression

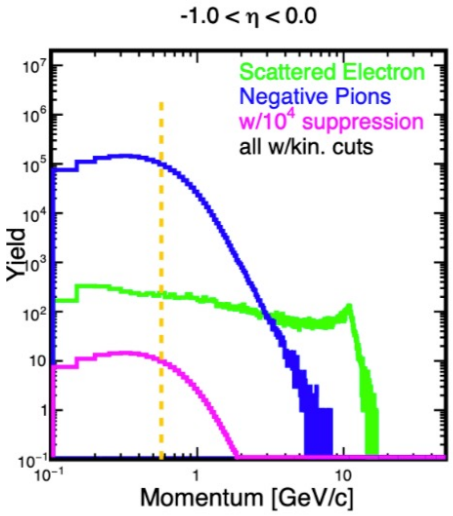
  → Derived from e/π ratios (MC), estimated PID suppression factor (Detector section) and (ideally?) isolation / calorimeter shower shape selection

  - See talk from Chao Peng

  - Can a full 'electron finder' be ready on required timescale?

    → Produce an idealised version?

    → Stay away from the regions that need most study (high y / low $E_e$)?



# 3) Basic Inclusive Cross Sections

- Need to converge fast on our estimated kinematic range, binning and systematic precision for unpoplarised inclusive ep

- Spin asymmetry and nuclear cases can then be derived

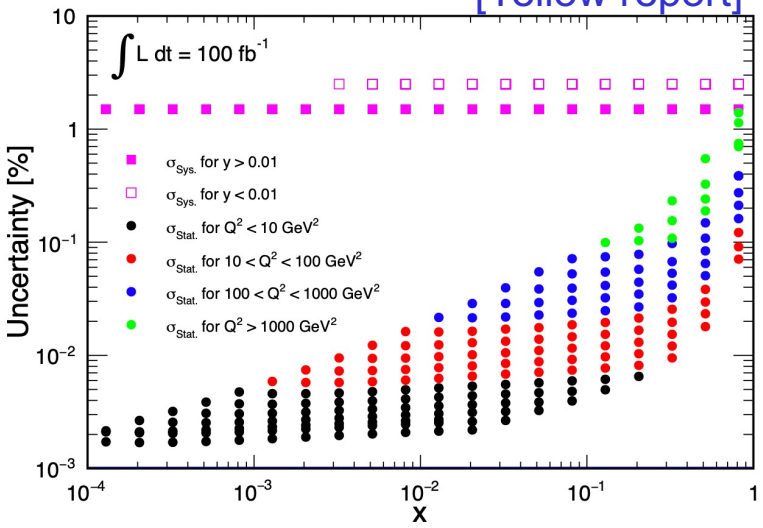
- PDF fitting colleagues are waiting for the simulated data

- Given timescales, likely to be based in part on ATHENA simulation, in part on yellow report an in part on educated Guesswork

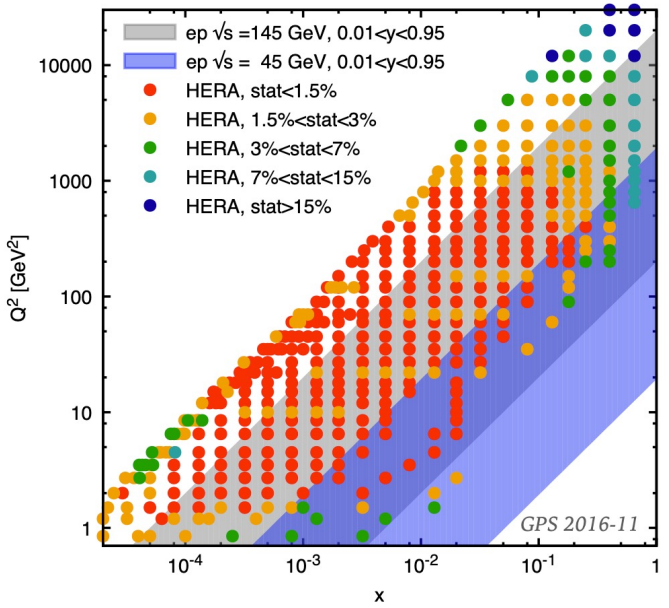
→ Dedicated sub-group 'brainstorm' meeting?

- Presentation of measurement capability for proposal also still under discussion

[Yellow report]




[Template for alternative suggestion]

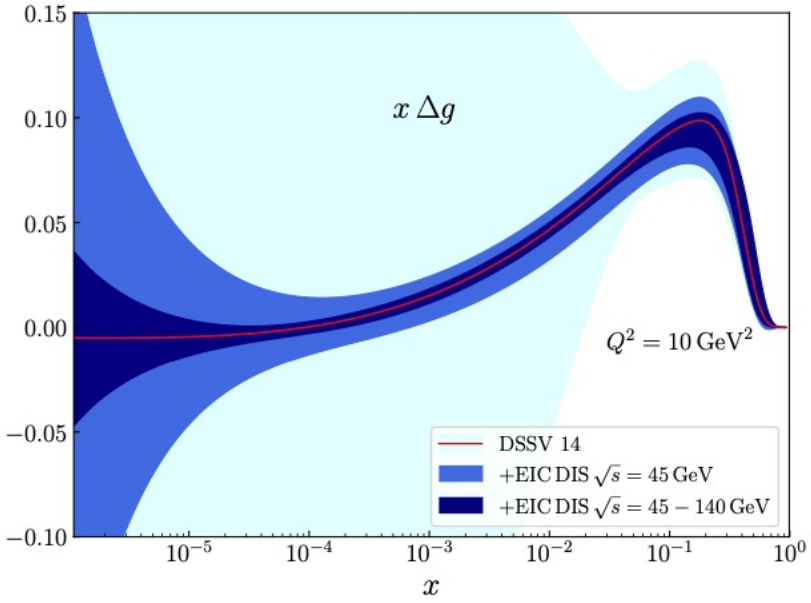


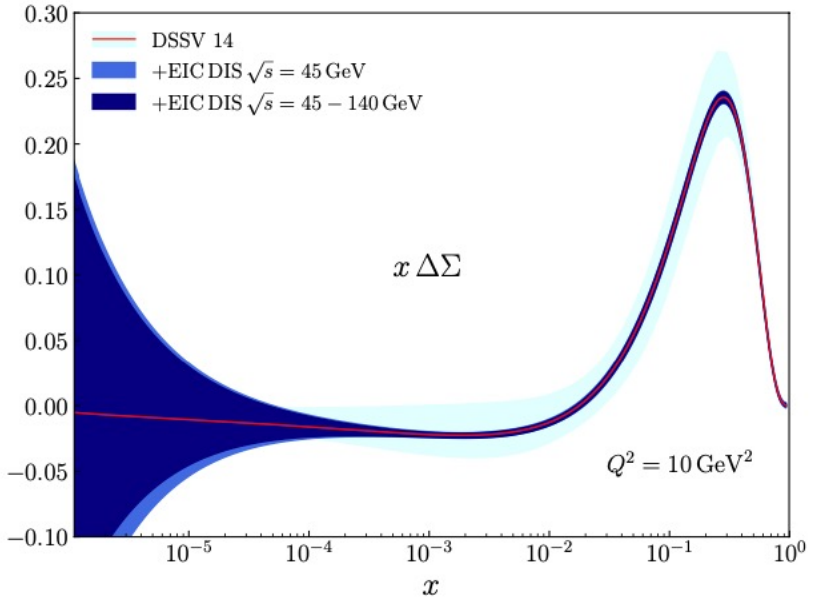
# 4) Impact on Polarised Parton Densities

- Fundamental ‘quality of measurement’ plot: predicted precision on ALL versus size of asymmetry as a function of x

- Plan to update impact study on gluon and singlet quark helicity Distributions (in contact with colleagues from DSSV and JAM)

[Old plot / Yellow report]

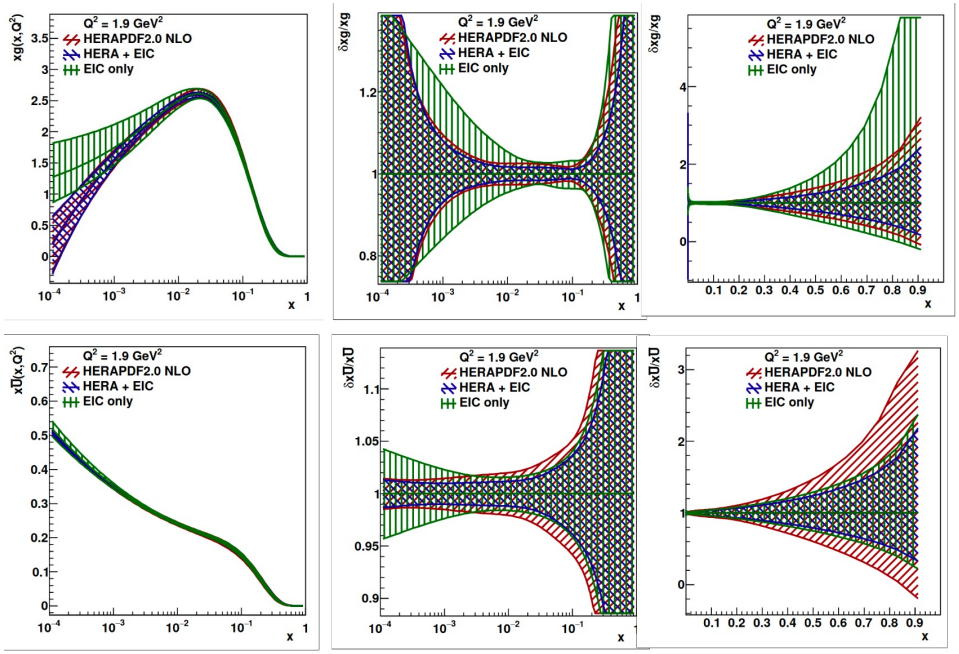


# 5-6) Impact on Nuclear and Proton Parton Densities

- Ongoing work (with K Wichmann and N Armesto) in xfitter framework leads to results on improvements relative to HERA for ep and standalone for nuclei

- No longer planning ‘optimistic and ‘pessimistic’ scenarios; just show a single ATHENA prediction




- Also aim to produce comparisons with global fits including LHC data etc
  → via NNPDF for proton PDFs
  → via EPPS for nuclear PDFs

- Fitting groups are interested and can work fast in principle, but we do need to get final pseudodata to them soon …