Request of full-sim NC high-Q^2 samples

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Motivation

- Interest in high-x region, for validation of the proton PDFs used/determined at LHC.
  - Double differential cross section measurements (both NC/CC).
- For understanding of kinematic reconstruction at EIC, both electron and hadron information are needed.
  - e.g. Comparison of methods: Electron method, Double Angle, Jacquet Blondel..

  → **Full simulation**.

➔ Request of NC high-Q^2 samples which covers whole kinematic region.

List of samples

NC electron-proton 18 GeV x 275 GeV unpol., DJANGOH incl. radiative corr., Wmin =1.4

$Q^2 > 2$ GeV^2	**: 1M events**	**2.28 pb^{-1}**
$Q^2 > 10$ GeV^2	**: 1M events**	**12.5 pb^{-1}**
$Q^2 > 100$ GeV^2	**: 1M events**	**252 pb^{-1}**
$Q^2 > 1000$ GeV^2	**: 500K events**	**5.53 fb^{-1}**

total 3.5M events

Check of population on x vs Q^2

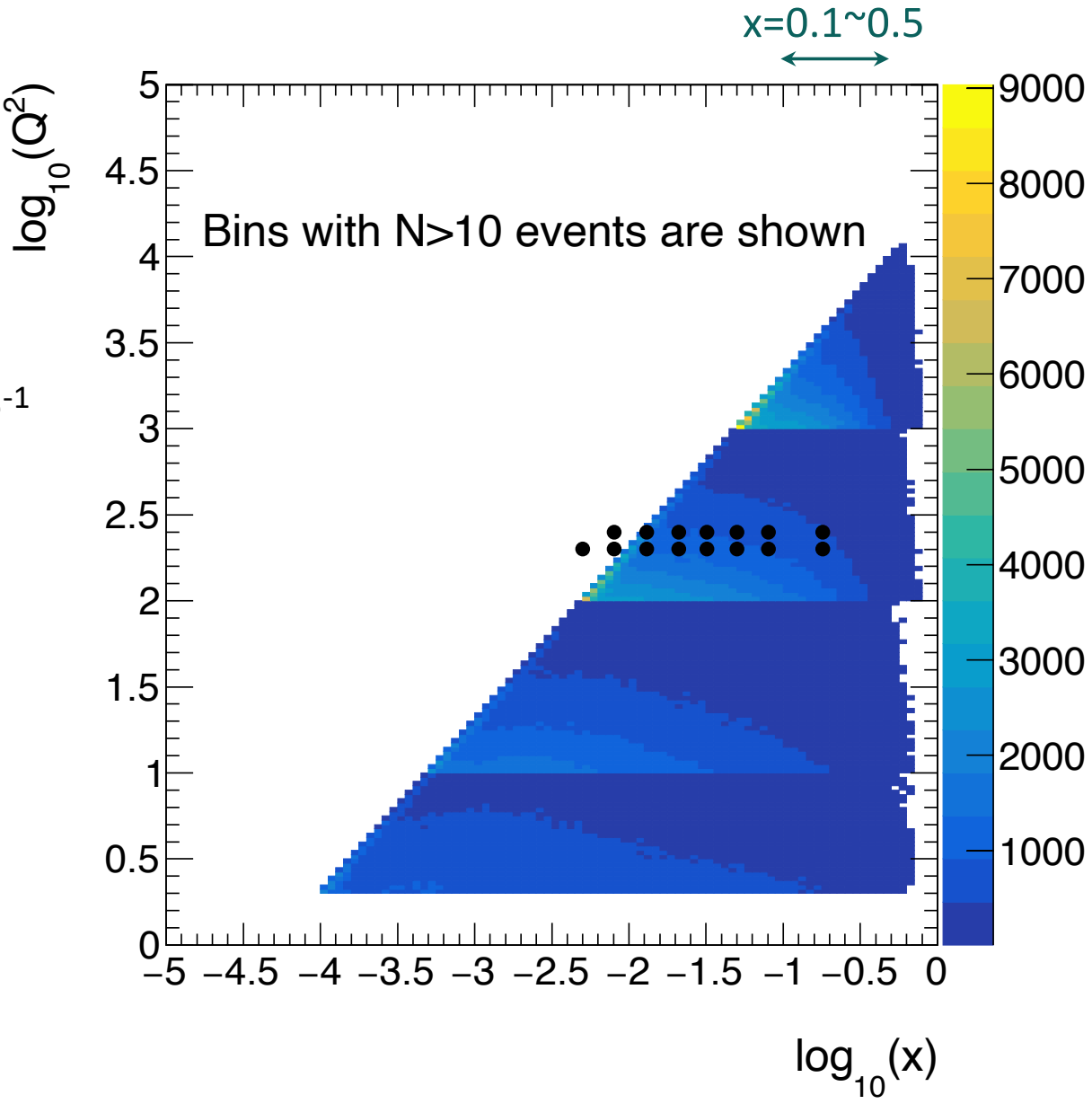
No normalization factors

- To see statistics

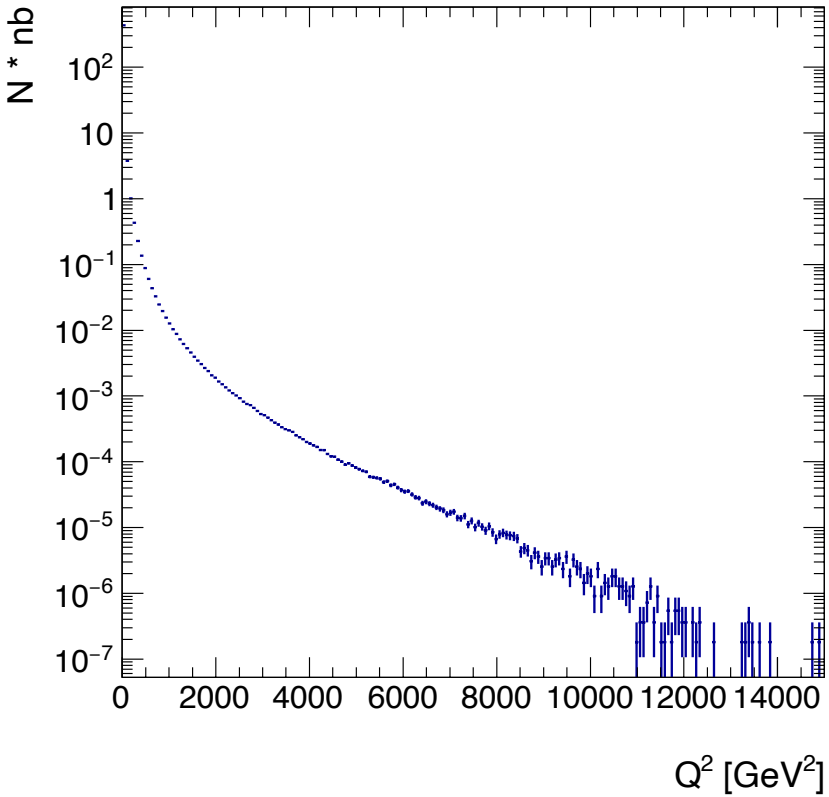
Black dots show ZEUS NC 72pb^{-1} x binning for Q^2=200 and 250 GeV^2 bins

- Not from the high-x measurement.

Reasonable coverage on x=0.1~0.5

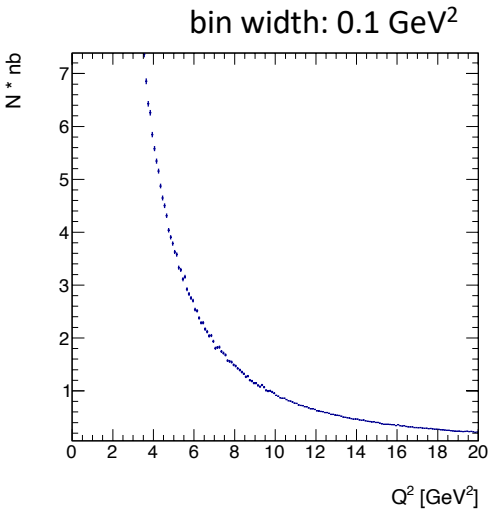


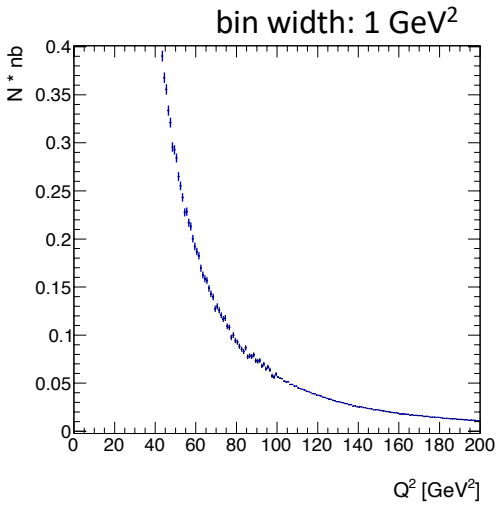
Combined Q^2 (leptonic, i.e. incl. radiative effect)

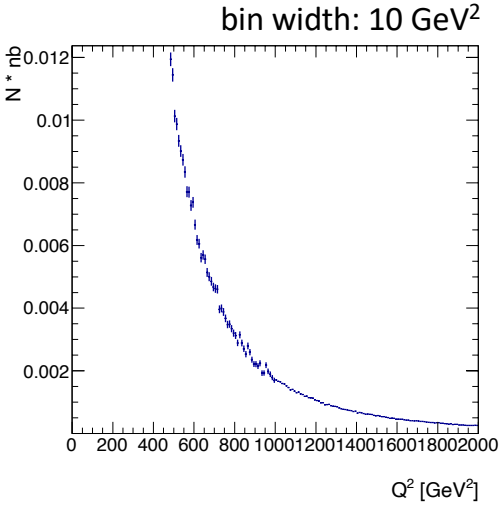


Distributions around the connecting points:

- Q^2 = 10 GeV^2
- Q^2 = 100 GeV^2
- Q^2 = 1000 GeV^2







Optional: 10 GeV x 100 GeV

Another beam setting would be useful for comparison.

NC electron-proton 10 GeV x 100 GeV unpol., DJANGOH incl. radiative corr., Wmin=1.4

$Q^2 > 2$ GeV^2	**: 1M events**	**3.40 pb^{-1}**
$Q^2 > 10$ GeV^2	**: 1M events**	**22.0 pb^{-1}**
$Q^2 > 100$ GeV^2	**: 500K events**	**331 pb^{-1}**
$Q^2 > 500$ GeV^2	**: 100K events**	**1.85 fb^{-1}**

total 2.6M events