More on status of diffraction studies

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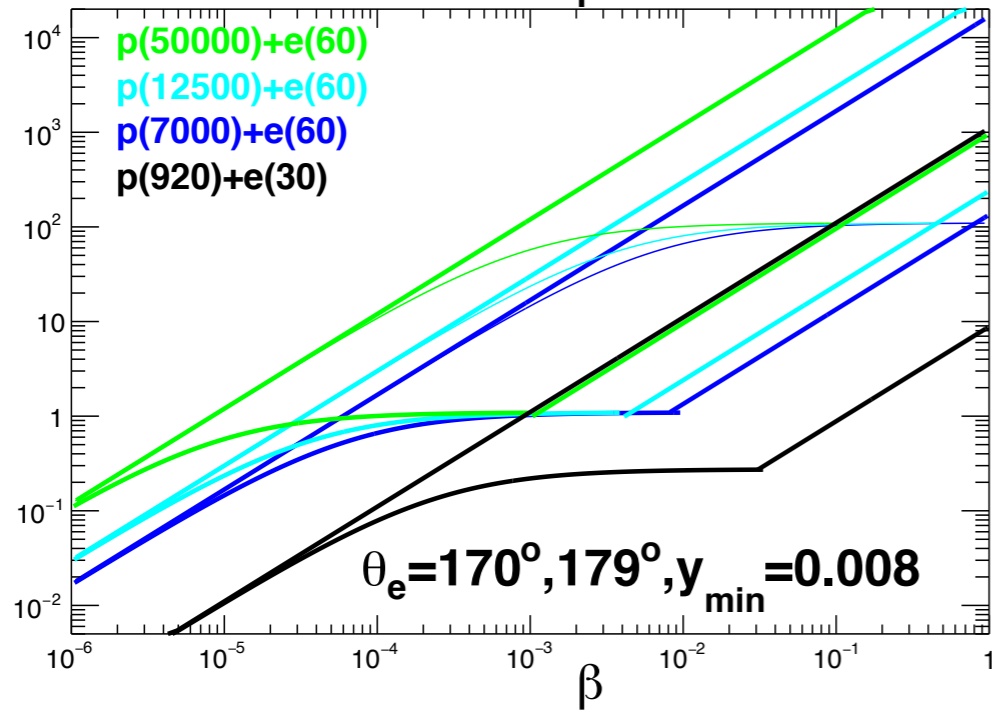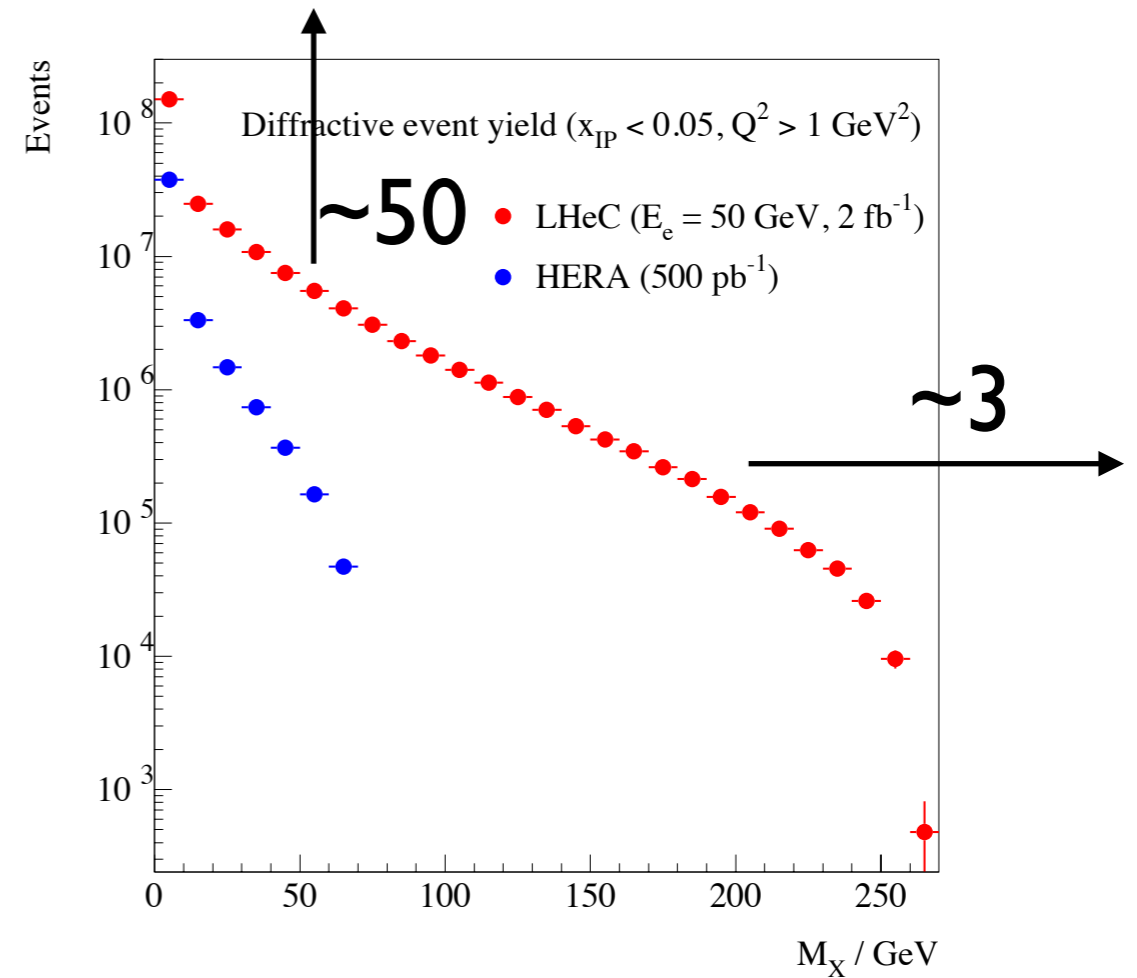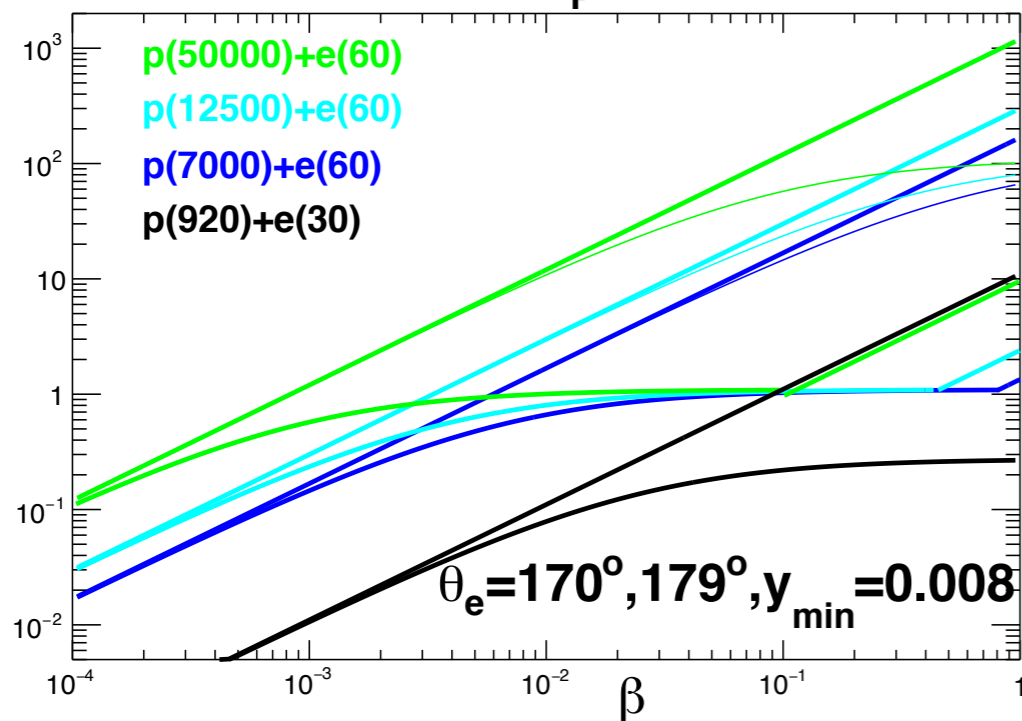
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for the LHeC/FCC-eh Study Group

Diffraction:

- ● Extend kinematic planes and mass distribution for FCC-eh?
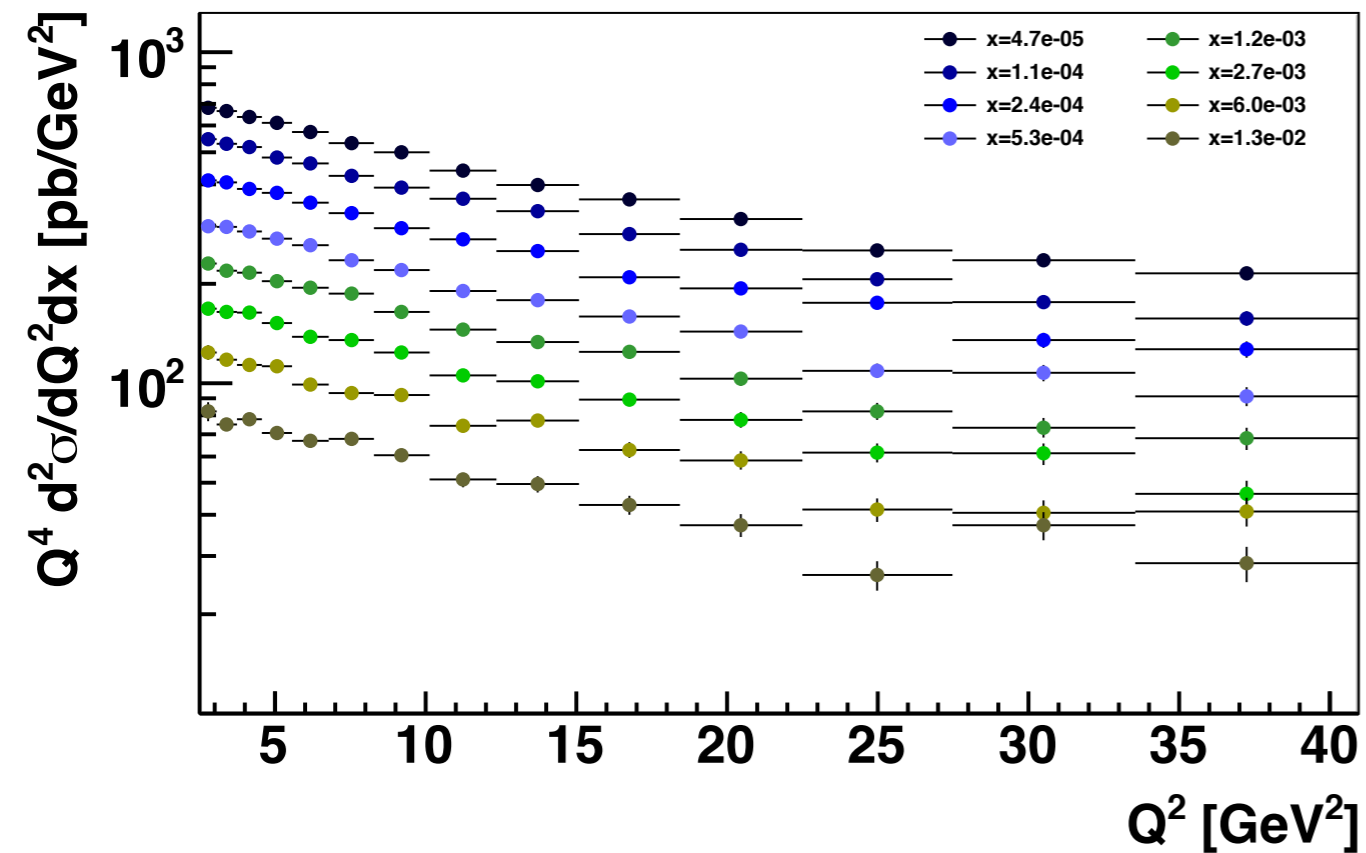
Q^2 (GeV^2), diffractive, $x_P = 10^{-2}$

p(50000)+e(60)
p(12500)+e(60)
p(7000)+e(60)
p(920)+e(30)

$\theta_e = 170^o, 179^o, y_{min} = 0.008$

β

Q^2 (GeV^2), diffractive, $x_P = 10^{-4}$

p(50000)+e(60)
p(12500)+e(60)
p(7000)+e(60)
p(920)+e(30)

$\theta_e = 170^o, 179^o, y_{min} = 0.008$

β

Events

Diffractive event yield ($x_{IP} < 0.05$, $Q^2 > 1$ GeV^2)

~50

● LHeC ($E_e = 50$ GeV, 2 fb^{-1})
● HERA (500 pb^{-1})

~3

M_X / GeV

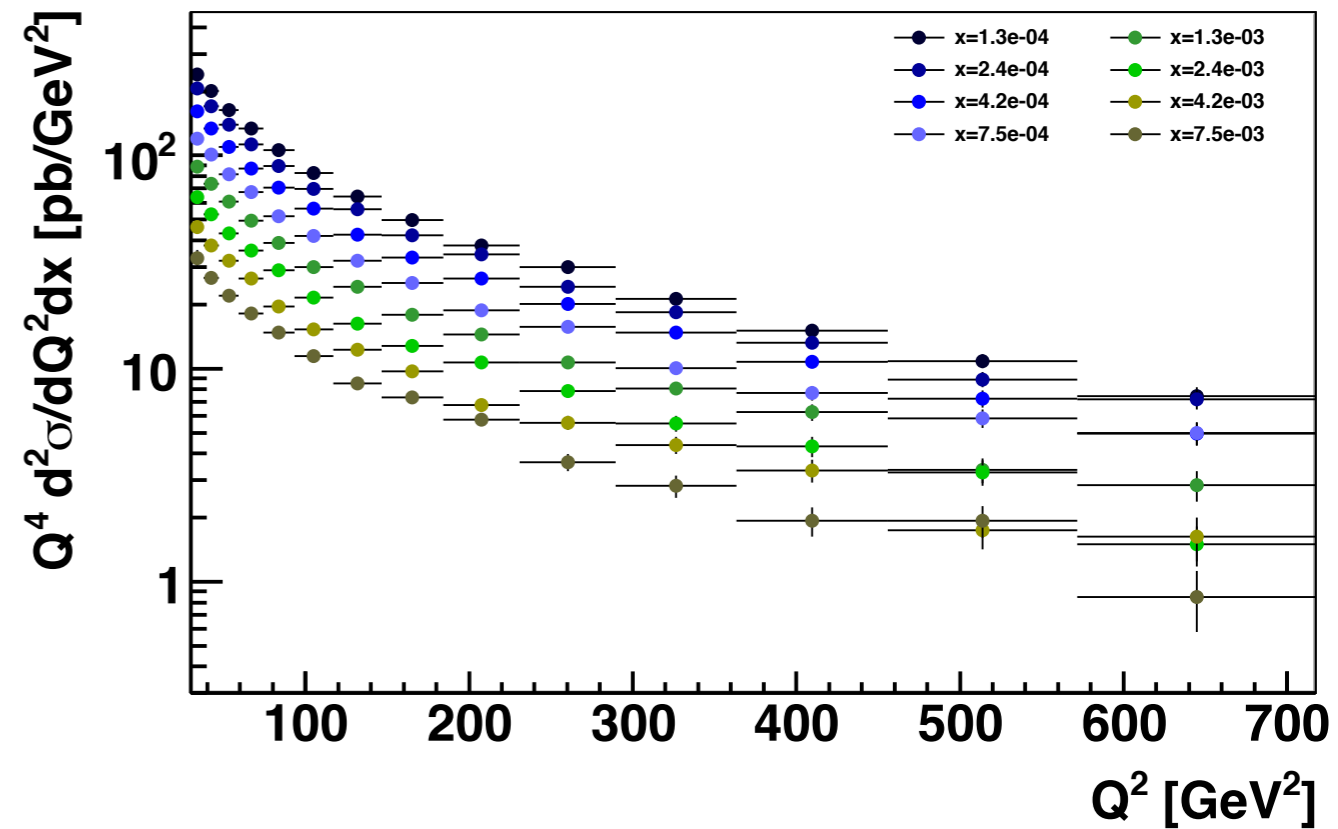*N. Armesto, 15.05.2017 - More on status of diffraction studies.*   2

DVCS:

- GPD fit using this pseudo data (and elastic VMs?).

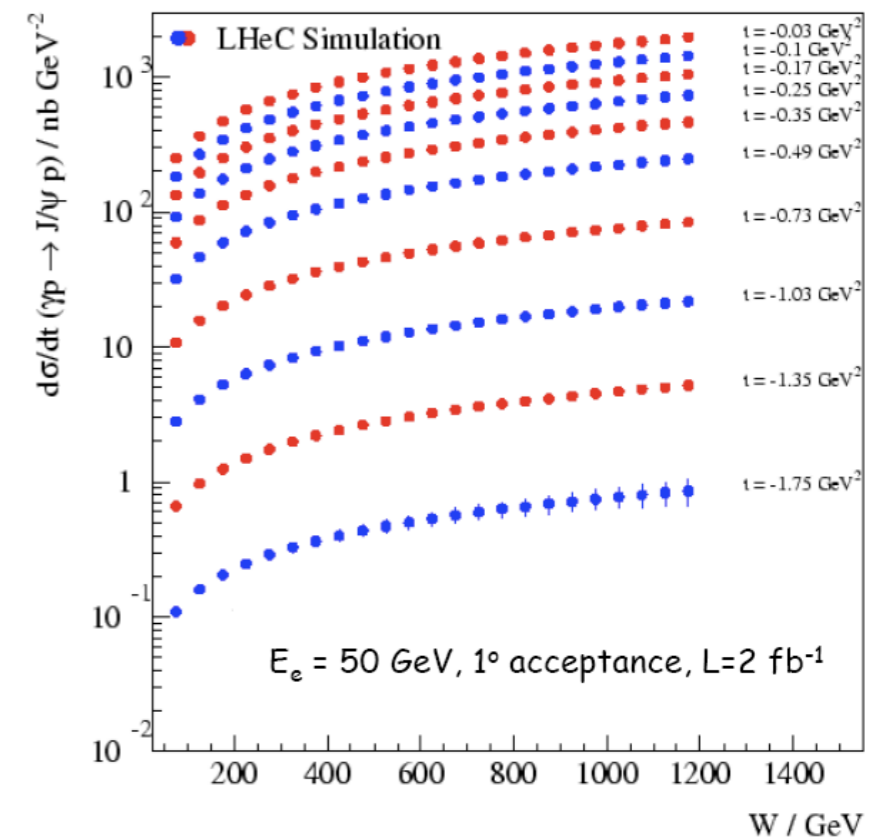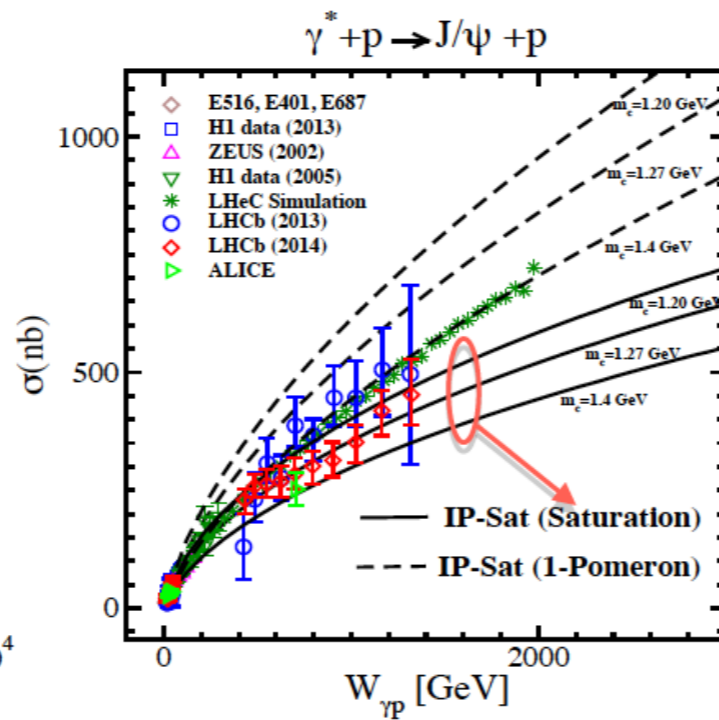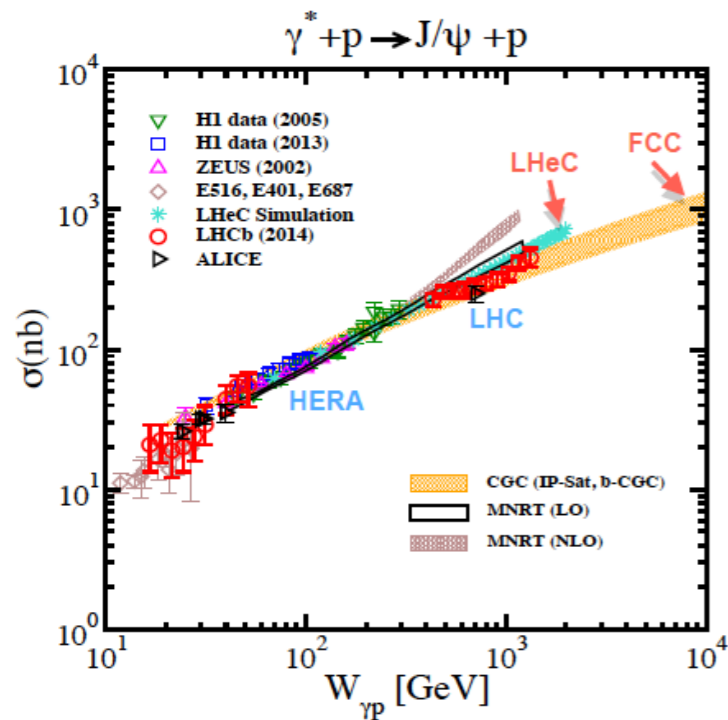DVCS, E_e=50 GeV, 1°, $p_T^{\gamma,cut}$=2 GeV, 1 fb^{-1}

DVCS, E_e=50 GeV, 10°, $p_T^{\gamma,cut}$=5 GeV, 100 fb^{-1}

Elastic VM:

- New results in the dipole model by Amir and Heikki for the LHeC and FCC-eh in ep and ePb, what can we do? W- and t-reach at the FCC-eh?
- New results on incoherent diffraction with hot spots?

Armesto and Rezaeian, arXiv:1402.4831

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● New results in the dipole model by Amir and Heikki for the LHeC and FCC-eh in ep and ePb, what can we do? W- and t-reach at the FCC-eh?

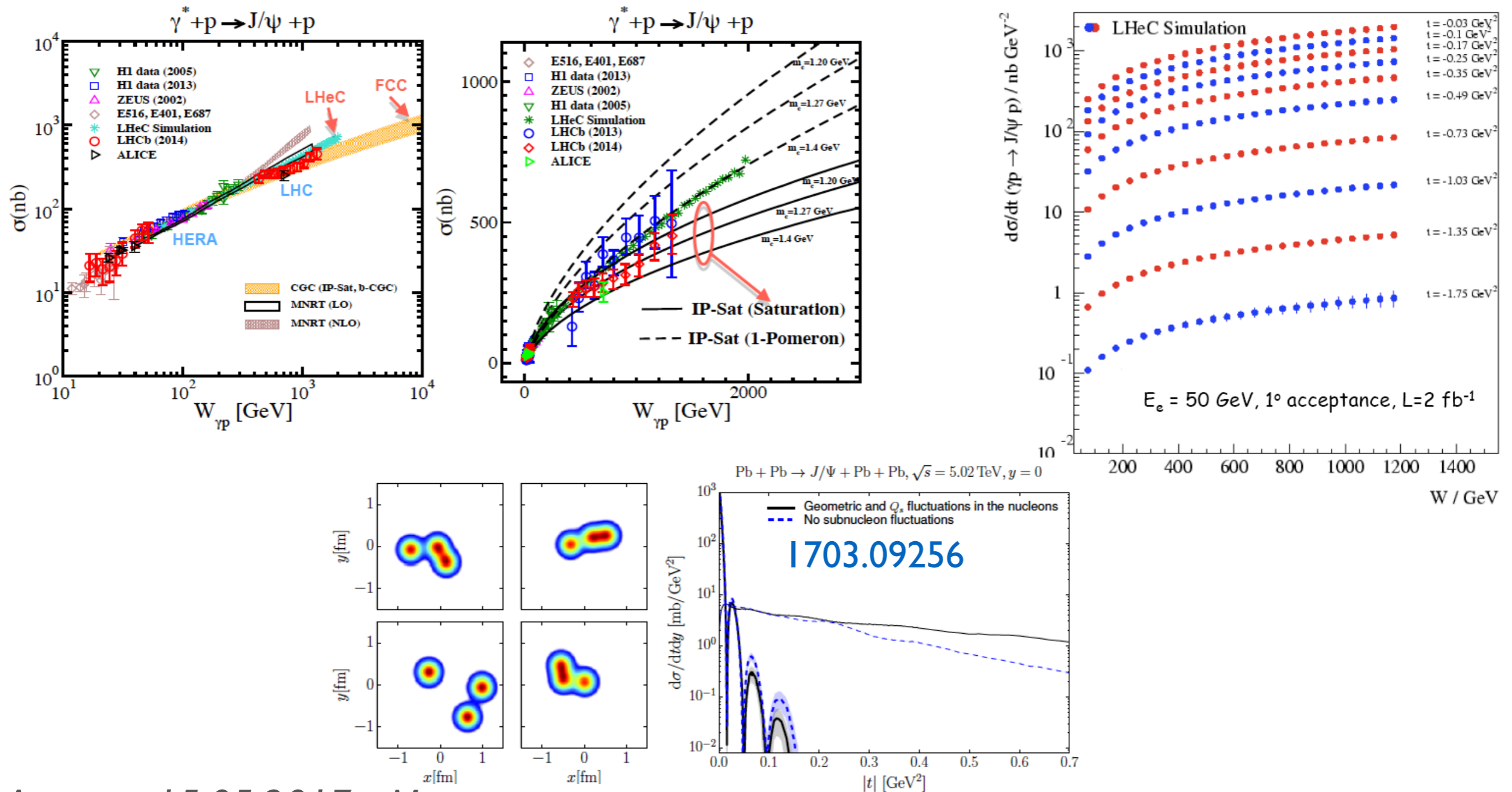● New results on incoherent diffraction with hot spots?

Armesto and Rezaeian, arXiv:1402.4831

1703.09256

Plans?

- **Short term**: LHeC workshop on September 11-13. What can we do for then?

- **End of the year**: FCC writing, need to have some updated plots for FCC-eh (kinematic planes, VM, DPDFs?).

- **End of 2018**: update of the LHeC CDR, what can we add? DPDF fits, GPD fits, in both ep and ePb?