


Notes: Monday 20 March 2017

PDFs and Low x at LHeC

Monday 20 Mar 2017, 18:30 → 19:30 Europe/Zurich

Description Second Meeting of the PDFs and Low x at LHeC on a bi-weekly base.
Only by Vidyo, a link will be set.
6:30pm CERN, 5:30pm Oxford; 1pm NYC (US DST starts 12/3)

Videoconference Rooms

 HERAFitter_Users_meeting

Join



AGENDA

Overview

Recap: list of goals

Deliverables

Discussion

List of Meetings / Goals

2

from last week

- Open LHeC PDF and low x meetings on bi-weekly basis:

- <https://indico.cern.ch/category/1874/>

- Near term goals and tentative talk plans:

- DIS17 Birmingham 3.-7.4.17 → assign speakers

- future DIS WG, convenor: Max and Rik Yoshida: possible contributions drafted with Rik:

- PDFs from the LHeC
- alphas from the LHeC and the FCC-eh
- precision electroweak physics at the LHeC
- nuclear PDFs at the LHeC

- People at DIS: Max, Fred, Mandy,...

- FCCweek in Berlin 28.5.-2.6:

- there will be one parallel session 1.5 h on FCC-eh physics

- draft program [comments very welcome!]

- Measurement of Parton Distributions and the Strong Coupling Constant
- Precision Higgs and Top Physics Measurements
- BSM Higgs
- Heavy Neutrino Searches with FCC-eh
- ep BSM Physics
- High Density QCD and eA Physics
- The Physics Interest in ep from the pp Perspective

- CTEQ summer school: EIC+LHeC synergy?

- Longer term goals

- LHeC Workshop in September

- Possible "Precision at LHC" Workshop which would be joint with LHeC and continue for 2017 (fall) +18.

- CDR/TDR LHeC / FCCeh

DIS: speakers:

- Mandy for PDFs
- Claire for alphas
- Daniel B for EW
- Hannu for Nuclear PDFs

Next meeting:

Tuesday 28 March
Prep for DIS

Simulated data

- Inclusive deep inelastic scattering
- Cross sections and structure functions simulation and uncertainties
 - Neutral current
 - Charged current
 - Strange
 - Charm and beauty production
 - top?
 - jet data?

Max
new simulated data for FCCeh

Determination of parton distributions

- QCD fit ansatz
- Valence quarks
- sea quark decomposing
- top quarks
- gluon PDF

Voica, Claire, Mandy, A. Guffanti
request to get LHeC grid from lhapdf5 to lhapdf6

α_s uncertainty determination

Determination of the charm mass parameter in VFN schemes studies

- study of the HVFNS differences
- Intrinsic heavy flavour

Ringaile ...

Electroweak physics:

- sin theta
- quark couplings
- W mass? *Stefano C*

Claire Daniel B
get jet simulated data
direct Z & W-boson production

Physics at small x

- Low-x physics perspectives at the LHC:
 - saturation models
 - TMDs

Anna & Nestor

Nuclear targets

- EPPS16, nCTEQ15

Nestor Fred & A. Kusina
...

Synergy LHC/EIC/ neutrinos

Tools:

- xFitter
- Alpos
- Oxford fit
- low x/nuclear tools

Nuclear parton density functions from jet production in DIS at the EIC

M. Klasen, K. Kovarik, J. Potthoff
arXiv:1703.02864 [hep-ph]

