Comments to: “Impact of jet production data on the next-to-next-to-leading order5 determination of HERAPDF2.0 parton distributions”

Paper Draft v0.5 – July 27, 2020

The paper is very well written, contains highly relevant results and is very complete.

My comments refer to minor formal issues

l.24 “agree very well” For me “very well” is a very subjective judgement; they either agree, possibly specified by “within statistical uncertainties” or “within systematic uncertainties”, or the do not agree. Similar, the “excellent” in l.98. I have no problems, if this comment is not taken into account.

l.271 both analysis -> both analyses

l.262 “+/-0.009(exp)” The spacing between the number and the opening parenthesis appears to be inconsistent in the paper. Personally I prefer a fixed small space.

References

[17] Is “H. Collaboration” correct?

[29] F. Aaron et al., [H1 and ZEUS Collaboration], -> F. Aaron et al. [H1 and ZEUS Collaboration], -> remove “,” for consistency.

Table 2 : Central Value -> Central value

Fig. 8 : I would have expected that delta(xg)/xg is centered at 0 and not at 1. What am I missing? I probably I have not understood “normalised uncertainty”.

Fig.11 The variable <pT>\_2 denote -> The variable <pT>\_2 denotes

l. 438 NNLO. at the -> NNLO. At the

l.439 as the NNLO fit since the H1 -> as the NNLO fit, since the H1

Footnote p.25: I also agree with the inclusion of the appendix; I understand that this footnote will be removed.

l.469 Additional Material -> Additional material; Alpha Scan -> Alpha scan

Footnote p.27: I support the inclusion of the material in the paper.

Caption Fig. 16, 17: old procedure -> procedure of Ref. []

In several of the captions (e.g. Fig. 15) both “gluon PDFs” and “gluon distributions” are used. In my opinion there should be only one term. I favour “gluonPDF”.

Again, my congratulations to the authors for this excellent paper.

Greetings,

Robert