

CW Review Comments by A. Schmidt

Congratulations on this result. I enjoyed reading your manuscript. I have some very minor comments, which I hope are helpful, and which you may ignore if they are not.
Best wishes for a speedy trip through peer review,

Authors Comments:

Thank you so much for reading our manuscript, and for your comments as well as compliments. Please find below our replies to the points made.

- First paragraph, right column p1:

I didn't find the description of the production time and formation time very clear.

- It sounds like production is the time scale to go from colored to colorless.
- Formation time is the time scale to go from colorless to fully dressed hadron

Do I have that correct?

Answer: To clarify, we intend in the first right-column paragraph of p1 to make a general introduction of the hadronization/fragmentation process, describe its two stages, color neutralization and hadron formation, and flash the hadronization time scales prior to defining them in terms of what has been already stated in the left column. Therefore, the definition of the production time is given between lines 58 - 61 from "...production time (τ_p)" until "...referred to as prehadron," which is, as the reviewer described, the time needed to neutralize the color charge of the struck color object. However, what comes afterward from line 61, "...which eventually.." up to line 63, "...formation time (τ_f)", about the evolution of prehadron to fully dressed hadron means to define the formation time. We hope that clarifies our vision about the sequence of given information.

Currently, you describe various actions as occurring "within the formation time" or "during the production time," implying that these tau's denote the maximum time by which these processes will finish. I think it might be better to say that these are the characteristic time scales over which the processes occur. Maybe that's too small a distinction to matter. But it would have helped me read the paragraph.

Answer: We already touched on this part too in the first point so the vision is to describe the two hadronization stages as well as their features in the right-column paragraph, then link that to the definition of both time scales, production and formation times, in the left-column first paragraph on p1.

- Line 63:

"The hadronization studies..."

Which studies? Do you mean studies in general? Would be fine to say:

"Hadronization studies are thus performed..."

Answer: We say so in line 63 based on the preceded definitions and descriptions of the two dynamics times scales in lines 55-63. Thus, the hadronization studies are performed, in general, to improve our understanding of these characteristics' time scales and constrain the existing models with different predictions about them.

- Line 87:

"The variables ν , Q^2 , z , and p_T are defined in Fig. 1"

That's not really fair. They are labelled in Fig. 1, but not defined.

In my opinion, some additional definitions would be helpful.

For example, Feynman x_F is not really ever defined.

Answer: We are sorry, but Fig. 1 contains the sketch and the caption and all mentioned variables are defined in the caption, which the reviewer seems missed. For example, that has been done also in the published CLAS12 TCS PRL, see Fig. 1 variables and how the authors referred to them in the text (see [this link](#)).

As for x_F , it's indeed defined as a footnote that shows up with the PRL setting (revtex4.2) in the Biblio, see Ref. 28, which is cited in line 146.

- Line 141:

"This inverted effect...in HERMES results, ..."

This could be made easier to read, for example:

"This inverted effect... observed at HERMES, ..."

Answer: Thanks for the suggestion, but we didn't use it as we feel it's better to keep "...in HERMES results,..." while following it up with "..., the sole baryon study so far,..".

- Line 172:

It would be helpful to clarify if this is per-nucleon or per-nucleus luminosity.

Answer: It's the per-nucleon luminosity. Adopted, see line 174 attached. Change is highlighted with bold for an easy tracking.

- Line 176:

You spell "Cherenkov" with a $\text{\u{C}}$ character.

If you want to use a Russian Romanization system with a caron-C instead of

good old regular 'Ch', that's none of my business, but the correct LaTeX for that is `\v{C}`, not `\u{C}`.

Answer: The spelling of Cherenkov with caron-C was simply copied from a previous CLAS publication and it did have the mentioned typo by the reviewer. However, it was no intention to adopt any Russian Romanization system as that was far from our thinking. According to [Wikipedia](#), “The symbol originates with the 15th-century **Czech alphabet**”. In any case and for the sake of simplicity and to avoid any further inadvertent interpretation, we are spelling it now as the name of its inventor, Cherenkov, see line 177 attached. Change is highlighted with bold for an easy tracking.