Response letter for SciPost Physics Proceedings (ISMD 2021)

Dear Editor,

We thank the referee for their comments and suggestions. We address the referee's points one-by-one and summarize the resulting changes we made to the manuscript.

Referee's report:

- *A little context of why LFWF are a good/interesting strategy, and what alternative approaches exist would be useful for general readers.*

  Our response: We thank the referee for the sugestions. To implement the referee's suggestion, we have added the following sentences at the end of the paragraph just after Eq. (2): → "The LFWFs are boost invariant in the longitudinal and the transverse directions. The BLFQ approach employs a suite of analytical and numerical techniques for setting up and solving the eigenvalue problem in a convenient basis space [3-5]. Complementary insights into nonperturbative QCD can be achieved from the discretized space-time euclidean lattice [6] and the Dyson-Schwinger equations of QCD [7]."

- *Page 4: The EMFF description is derscribed as "impressive"; there are, however, notable deviations from the data, with the LH plot systematically overshooting higher-Q^2 points. Quantitatively, how good is the fit; is the high-Q^2 mismatch understood; and how does this description look from other approaches ?*

  Our response: We adjusted the model parameters by fitting the light mesons mass-spectroscopy. Note that we did not fit the EMFF of the pion. This is our prediction. The notable deviation of our EMFF from the data at high-Q^2 can be understood from the basis trucation in the transverse direction ($N_{\max}$) in our BLFQ approach. Our current truncation ($N_{\max} = 14$) implies the UV regulator $\Lambda_{\rm UV} \sim b\sqrt{N_{\max}} \approx 1$ GeV, where b is the harmonic oscilator scale parameter. Thus, our predictions are most reliable in the low Q^2 region, where our result is also consistent with other theotical approaches and phenomenological models (lattice QCD, Dyson-Schwinger equations, light-front holography, cosntituent quark model etc.).

  Modification: We have modified the following sentence "We find an impressive agreement between our results and the precise low Q^2 EMFF data."

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"We find consistency between our results and the precise low Q^2 EMFF data. Meanwhile, notable deviations have been observed at large Q^2. Note that our choice of $N_{\max}$, implies the UV regulator $\Lambda_{\rm UV} \sim b\sqrt{N_{\max}} \approx 1$ GeV [4]. Thus, our predictions are most reliable in the low Q^2 region."

- *The nucleon description shows plots of GPDs and TMDs, but not the collinear PDFs, where comparison to global-fit models would be interesting. Could such a plot be included?*

  Our response: As suggested by the referee, we have now included the plot for the nucleon PDFs in Fig. 5. The corresponding discussions have been added in page 3 (last paragraph)

- *A short conclusion mentioning the next intended steps from here would be nice to have, and conclude the contribution well.*

  Our response: As suggested by the referee, a short conclusion and outlook have been included on page 4.

Yours sincerely,
BLFQ Collaboration