MANUSCRIPT EPJ-19-10-080
Resubmission of the manuscript

Dear Prof. Jochen Bartels,

We would like to resubmit our manuscript for publication in the European Physical Journal C. We are thankful to the referee for the points raised on the previous version of the manuscript. In what follows, after quoting each item of the report we specify the corresponding changes in the manuscript. Please, see also our NOTE at the end.

Referee : *Authors consider the possibility to describe the available (at* $\sqrt{s}$ *> 10 GeV and/or > 5 GeV) forward data on* σ_{tot} *and* $\rho = Re/Im$ *ratio within the QCD inspired model which includes the minijet production and the 'soft' component but do not have the Odderon contribution. For the QCD part they use three different sets of parton distributions and get in each case a rather good results. However each time the tension with the TOTEM 13 TeV data was observed. The model gives* $sigma_{tot}$ *a bit smaller and* ρ *a bit larger than the values claimed by TOTEM. This may indicate the necessity to include a C-odd (Odderon) high energy amplitude.*

I recommend the publication of EPJC-19-10-080 manuscript but after the revision.

1. sect 4,A – we can not use 4 TOTEM 8 TeV values of σ_{tot} *shown in Table I as an independent data points with their error bars (the same for 2 TOTEM points at 13 TeV). These values were extracted from the same set of* $d\sigma_{el}/dt$ *data. Either author have to choose the best (from their point of view) result or to include all four 8 TeV points keeping the correct statistical weight; that is they have to enlarge twice (*$\sqrt{4}$*) the error bars for each point.*

Following the recommendation, we have developed new fits with the three PDF's. Noting from Table 1 that we have 5 points at 8 TeV, the uncertainties of these points were multiplied by $\sqrt{5}$ and those at 13 TeV by $\sqrt{2}$. One figure (10) and one table (X) have been included, together with a discussion comparing these results with those obtained under the assumption of independent points. All this new material appears now as

Appendix B.

We propose to append the material for the reasons that follow. As commented in the text, this manuscript is an extended version of a short communication already published in PLB (reference [39]), where only the pdf CT14 was employed and the independence of all the TOTEM data was also assumed. We understand that to maintain the independence of the points in the main body of this extended work is a matter of consistency with our previous publication. Moreover, as demonstrated in Appendix B, in practice, the two procedures led to results that are equivalent.

Referee : *The value of* $x_{min} = 10^{-10}$ *(page 8,left) is a bit misleading. First* $1^2/13000^2 \sim 10^{-8}$ *and not* 10^{-10}*. Next, actually the major contribution to* σ_{tot} *comes from the central (plateau) region where* $x_1 \sim x_2$*. Correspondingly we deal with* $x \sim \sqrt{Q^2_{min}/s} \sim 10^{-4}$*.*

In this respect the changes that follow have been performed in the text: where it was written " ... we see that the smallest x scale probed ... . On the other, ...",
we now write: "... we see that the smallest product x_1x_2 probed by the parton pair is

$$(x_1x_2)_{min} = \frac{2Q^2_{min}}{s}, \tag{1}$$

which, taking $Q^2_{min} \simeq 1$ GeV^2, yelds $(x_1x_2)_{min} \sim 10^{-4}$ at LHC13. In this case, if one of the partons has an especially large fractional longitudinal momentum $x \sim 1$, the other one has $x \sim 10^{-8}$. On the other hand, ...".

Referee : *page 2, left – Authors have to add the Donnachie-Landshoff paper Ref[113] (=arXiv:1904.11218) to the 4th item.*

Reference included in the 4th item. We have also updated the publication in Phys. Lett. B.

Referee : *page 2, right, 14 line from bottom – 'semihard formfactor' was not defined (may be to put here the reference to eq.s(14-16) below)*

Reference included according the recommendation. Thank you.

Referee : *page 13, right, 2d line from bottom – – 'may be the responsible' twice*

Referee : *page 9, right, 7th line from bottom – – 'we see that' twice*

Both corrected. Thank you.

*** NOTE

Unfortunately, in the previous submitted manuscript there was a systematic mistake in the figures presenting the results with the pdf's CT14 and CTEQ6L (figures 3 - 8). The two curves in each figure corresponded to the same file, CT14 and not CT14 and CTEQ16. That was the reason why the results overlapped.

All these figures were corrected and we note now a slight difference in the two cases, which, however, does not change the results and all the related discussions either.

Sincerely yours,

M. Broilo, D.A. Fagundes, E.G.S. Luna, and M.J. Menon