

We thank the referee for his careful reading of our paper and for his very useful and constructive suggestions.

The main point raised by the referee is the demand that we address the total Z production cross-section, both by discussing all contributions in which b quarks appear in the final state in association with a Z , and also by providing predictions for the total Z cross-section. We agree that both points are interesting, and we have added the corresponding discussion to the paper.

Specifically we have:

- added the last sentence of the abstract;
- added a discussion of the quark-induced contributions in the introduction: from the penultimate paragraph on Pag. 2 (“Here, the methodology of Refs....”), to the last paragraph on Pag. 3 (“In the 5FS, the Z -production...”), including the new Fig. 1
- added a discussion of the total cross-section, including estimates of mass effects on the light-quark induced contribution: from the last paragraph on Pag. 12 (“Having determined...”) until the first paragraph on Pag. 14 (“In summary...”), including the new Fig. 5.

We have further addressed each of the individual points raised by the referee, which we discuss in turn:

1. we have modified the sentence by removing the reference to other matching methods;
2. we have modified the sentence in order to make clear that the scale we are talking about is the scale of the process, and that we are discussing generic features of matched calculations, not specific results of this paper;
3. we added the statement that all results are presented for LHC 13 TeV (beginning Pag.5);
4. we have added an explanation of why the band is added in the beginning of the paragraph before Eq. (1) (“Because we extend plots down...”); why it is appropriate to take Eqs. (1-2) as two extremes, rather than one as the center and the other as a variation, sentence two lines after Eq. (2) (“The two options...”) and finally an explanation of the uncertainty band for the $\mu_b = 2m_b$ (of which only the upper edge is shown purely for reasons of readability of the plot);
5. we have changed the text as suggested by the referee;
6. probably our text was not clearly written, since what we were trying to say here was exactly what the referee says (namely that the resummed logs are larger than the fixed order ones — we even said this almost verbatim later in the paper: “raising the matching scales...reduces the size of the logs which are resummed”); we have changed the wording of the sentence and now state this more explicitly.

We hope that we have addressed all the issues raised in a satisfactory way and we believe that the paper has significantly improved as a consequence of these changes.