

Dear Roberta, Elena and Torsten, apologies that I come so late with my comments - I had read the text earlier, but did not find time to write down the comments, unfortunately. In general your chapter is nice, I found the text here and there improvable, see below a few suggestions I have. regards, anton

- in the introduction, you tend to use generic - and much worn - language like "have been considered", "so-called QGP", "is thought to be" ... I would try to minimize such expressions.

"additional" (charmonium production mechanism) is not optimal

removed "additional" (doesn't add any information)

Actually some of the general-character paragraphe in your introduction would find their way in the general introduction of the review, I think. This includes the R_AA paragraph, I think.

we'll leave this to the unification effort

- 1.53: "which can counteract" is not optimal, at least I don't see this as counteraction

How about "These observations suggest the existence of the previously mentioned (re)combination process, which might set in already at RHIC energies and which can compensate for some of the quarkonium suppression due to screening in the QGP."

Your sentence reads well. Ok for me

- 1.60: "Y are" -> The Y mesons

OK

- in Fig. 1 left, for the range 6-10 GeV/c there seems to be no CMS, it is a bit unfair to CMS

the blue line going at $p_T=6.5$ is supposed to indicate the CMS acceptance. Wasn't sure how to display CMS and ALICE properly in the overlapping region. Suggestions to make this less misleading are welcome (correct acceptance is listed in the table 3 in any case).

Well, the plot seems clear to me because there is a blue line between 6 and 10 GeV. I don't see many other ways of showing CMS and ALICE superimposed. As you mention the table contains the acceptance coverages, so precise values are given.

- in Tables 2,3 the yield dN/dp_T is what is measured too, both at RHIC and at the LHC, isn't it? Table 2 contains a lot of repetitions, but we have to live with this I guess

in principle dN/dp_T , dN/dy , $RAA(p_T)$, and $RAA(y)$ were all measured. Could add this information. Suggest merging rows with identical observables.

Not sure I get the point. The way you did now (e.g. yield and $RAA(y, p_T, \text{cent})$) seems clear and contains all the infos. do you mean somethin else?

- 1.81: "initial" not needed

OK, though wonder if we could change from "Other effects,..." to "Initial state effects,..."

- 1.82: "its" -> their

OK, changed to modification+s+ since there is more than one modification. With modification in singular

"its" was correct.

- 1.93: discussion of the $\psi(2S)$ production ?

OK

- Table 4: I would not call the quarkonia resonances, simply "mesons"?

OK, actually do we need anything like resonances or mesons? Why not just "for charmonia and bottomonia"

- 1.114: "on the lattice we concentrate" is too colloquial

paragraph was rephrased based on Andrea's comments

- 1.128: "To briefly summarize ..." this whole sentence makes not much sense to me. Also the next sentences sound too colloquial, I would try a bit more stiff

How about changing: To briefly summarise the current outcome of such program, any study of charmonium and bottomonium produce sensible qualitative results: at some temperature T above, and not too far from the critical temperature, and possibly coinciding with it, a given state melts. The devil is in the details, and a final consensus on quantitative issues has not been reached yet. Why? First, experiences with lattice calculations has taught us that it is extremely important to have results in the continuum limit, and with the proper matter content...

to

All such quarkonium studies yield qualitatively the same result: a given quarkonium state melts at a temperature above, or possibly at, the phase transition temperature. There are, however, disagreements between different calculations in the precise temperatures for the following reasons. First, experiences with lattice calculations have demonstrated that it is extremely important to have results in the continuum limit, and with the proper matter content...

Ok for your sentence, which sounds less colloquial

- 1.137: "difficult, ill-defined" ... I would say or-or, you cannot have both. And if ill-defined let's not discuss it even.

how about "difficult, possibly ill-defined, problem"?

Ok

- 1.149: "one encounters 'feed-down'" sounds funny

already rephrased to " In actual production, however, only a fraction (about 60%) of the observed ψ is a directly produced..."

- 1.152: "so that the medium affects the excited state" ?

"so that the medium +only+ affects the excited state"

- 1.156: "disappear" ?

disintegrate

- 1.158: "An observation..." this sentence reads like 20 years ago, I would propose to try a variation

how about removing it?

Anton is right. We already know that the story is not so simple. I'd remove it not to enter again in the explanation of suppression/recombination contributions...

- in Fig.8 psi lowercase

Fixed

- sect. 2.4 in the title is "behaviour" the most appropriate word? it doesn't sound to me ..."production" is better, I think

OK (in lack of a better word. I personally don't like to talk about production in A-A, because it simplifies the fact that stuff gets produced AND destroyed)

- about Fig.24, the small R_{AA} values at high p_T : I think we should not shy saying that this is the outcome of charm energy loss in deconfined matter (this of course does not explain quantitatively why the D and J/ψ values are so coincident, but it is a generic expectation and we shall mention it).

How about "... as shown in the top right of Fig.~\ref{fig:open_closed_HF}. The suppression of high- p_T D mesons has been linked to charm quark energy loss inside the QGP. While the J/ψ itself is a colourless object, its coloured precursor may be subject to similar energy loss though current models underestimate the J/ψ suppression at high p_T in \sqrt{s} collisions at the LHC~\cite{Sharma:2012dy}."

Ok, nice sentence

This topic: ReteQuarkonii > Anton

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