Ilya's comments

Hi DongJo, All,

thanks for the prompt action. I went through the changes to the draft and only spotted a few places where some small modifications are needed (these are attached below).

Regarding the new sentence added on line 418 I propose the following modification of lines 415-425:

This illustrates that the SC observables together with the individual flow harmonics provide better constraints for the model parameters than each of them individually.Once the calculations with an a verage over the temperature evolution of the expanding medium (constant η/s parameterization ($\eta/s = 0.20$, "param0")) is compared to the temperature dependent η/s parameterization ("param1", where η/s is the lowest ($\eta/s = 0.12$) at the temperature around 150 MeV), in case of v_n , the χ^2 values with "param0" are smaller than those with "param1" but the opposite trend is observed for SC(m,n). Furthermore we observe a clear separation of two parameterizations for SC(5,3) which is even larger than SC(4,2). These observations support that with the SC observables one can constraint the temperature dependent $\eta/s(T)$, taking one step further from estimating the simple average quantity η/s.

->

The χ^2 for calculations for vn with constant $\eta/s = 0.20$ ("param0") are smaller than those with temperature dependent η/s parameterization with a minimal value of $\eta/s = 0.12$ at the temperature around 150 MeV ("param1"), while an opposite trend is observed for SC(m,n), in particular for SC(4,2) and SC(5,3). This illustrates that a combination of the SC(m,n) observables with the individual flow harmonics v_n may provide sensitivity to the temperature dependence of the $\eta/s(T)$ and together they allow for a better constraints of the model parameters.
————

R : Done, a better constraints-> better constraints ?

Also, along the lines with comments by Sudhir and Constantin, I think we should plot chi2/NDF in Fig. 7 and update Eq.(5) accordingly.

R : Done.
Cheers,
Ilya

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remaining comments for "2017-Aug-20-paper_draft-longSC_CR_R2_v7.7.pdf"

Eq. (1)
d\vec p^3
->
d^3 p
R : Done

Eq. (2)
\phi in exponent is not defined

I think this is a general rule for publications that every variable in
equations should be defined, even if it seems obvious.
R : Done
l143
Why plural in "The data samples…"?

R : Changed to "The data sample… was"

l292-295
of 1.5 mb, while the Lund string fragmentation parameters were set to
α = 0.5 and b = 0.9 GeV −2 . ... fragmentation model [95, 96].
->
of 1.5 mb. ... fragmentation model [95, 96]. The Lund string
fragmentation parameters were set to α = 0.5 and b = 0.9 GeV −2 . ..

R : Done
l327-328
well described for the more central collisions ... a little more than
=>
reproduced in 0-40% centrality range … about

Remove ", as shown in Fig. 4." - this is clear from the context as the
whole paragraph describe observations from Fig. 4.

R : Done
Figs. 4,5,6: Legend for data

- "black circle NS(m,n) / NSC(m,n)" -> "black circle ALICE"
- remove "ALICE" from "ALICE Pb-Pb sNN = 2.76 TeV"
- place only one legend for black circles (not for both SC and NSC) -
similar to the way it is done for model lines/symbols

R : Done

Fig. 7 Y-axis
10^1
-> (I should have noticed this in a previous iteration)
10
R : Done

l759
vn is measured for charged
-> (to indicate that this is different from Figs. with pT_min dependence)
vn results presented in this section are for charged

R : Done

Constantin

Hi Dong Jo,
in the mean time I took a look at the figures, for some cosmetic comments.

Please read the FAQ at
https://twiki.cern.ch/twiki/bin/view/ALICE/EditorialBoard#FAQ

In particular apply the change of not having horizontal lines at the error bars,
R : fixed everywhere
also go through all figures, make sure legend is large, x-y- title large,
and not much white space between titles and axes, as well not around the figure,
R : yep, they look good to me.

Make sure Fig 6 is not floating
R : It is ok.
Fig 7, I would label chi2/Ndof
ALICE is missing, put center mass 10-50% Pb-Pb
(remove Centrality)
R : Done

Fig 8 markers seem a bit too small
R : enlarged

Ref 102 only mention first author et al
R : Fixed.

Constantin

Barbara

Dear Dong Jo and all,

I have read version 7.7, with a particularly careful reading of the introduction, results, and model comparisons sections. The paper reads better, and I appreciate that you took so many of much suggestions.

Thank you for adding the chi-square values! I think that figure 7 is quite informative. In particular, the similarity of all the values in the middle panel says that the NSC(m,n) have little discriminating power among the models. One does seem to need to look more at the value of the vn and SC!

There is one wording mistake in this new section. What is shown is not least squares, which is after all, where you vary parameters to minimize chi-squared. It is simply the chi-squared value. So, please remove "using the least squares-chi^2 method".
R : Done
While I would personally not write so much about each different correlation, I realize that it is the wish of the authors to do so. The summaries at the end of each section telling what is learned from the trends is very nice.

A few small comments:

Line 329: "it fails" should be "fail"
R : Done
Line 343: "are clearly favored by" should be "clearly favor"
R : Done
Line 349: "stronger" should be "larger", as the comment refers to the magnitude, rather than the centrality dependence.
R : Since those are negative, i change it to "smaller".
Line 350: the sentence is a bit confusing. It is clearer if you remove "fairly well"
R : Done
Line 418: The first sentence is very difficult to understand. I suggest revising as follows: "The calculations with an average over the temperature evolution of the expanding medium …" and ending the sentence after "150 MeV". Then the next sentence reads "The chi^2 values for vn with "param0…
R : Yep, agree, these were reformulated based on Ilya's suggestion.
Line 424: "constraint" should be "constrain". I suggest removing the phrase beginning "taking one step further" as it doesn't add any information but makes the message a bit less crisp.
R : Yep, agree, these were reformulated based on Ilya's suggestion.
Line 426: add "the" before "best"
R : Done
Line 427: invert the order of "both" and "for"
R : Done
Line 428: remove "from theoretical models"
R : Done
Line 434: "is well reproducing" should be "reproduces"
R : Done
Line 443: I would remove "To clarify", as the sentence doesn't really clarify, it makes a statement that is self-evident from the complicated pattern of agreement/disagreement of the models with the data.
R : Done
Line 473: should write "the data favor" as data is a plural word (a single item is actually a datum!)
R : Done

best regards,
Barbara