

PWG comments/suggestions

Paper Title:

Elliptic flow of strange and multi-strange hadrons in isobar collisions at $\sqrt{s_{NN}} = 200$ GeV at RHIC

PAs:

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Target journal:

Physical Review C

PWG recommendations:

Thanks for posting the paper draft and related materials. They are in a good shape. I have a few comments/suggestions for your consideration.

Replies to PWG comments/suggestions:

1. Fig. 2: I would suggest drawing Ru and Zr with different symbols, eg solid and open markers? They can't be distinguished in b/w printing.

Reply: We have modified Fig. 2 with different symbols for Ru (solid star) and Zr (open star). The updated figure is included in the paper draft.

2. In the section of systematic uncertainties, it would be better to list some examples instead of saying we varied event selection, track selection, particle identifications etc.

Reply: We have added the details of the systematic uncertainties in the paper draft as:

“We varied the lower V_z cut from -35 cm to -30 cm and the higher V_z cut from 20 to 25 cm to account for systematic uncertainty in event selection. The particle identification cut, such as the NhitsFit and $n\sigma$ values, is varied by $\sim 10\text{-}20\%$ from the default value. In order to obtain the systematic uncertainty from decay topology, we varied DCA of the parent particle, DCA between daughters, DCA of the daughters to the primary vertex, and the decay length of the particle by $\sim 20\%$ from the default values. We also estimated systematic uncertainty associated with the background estimation by varying the order of the polynomial fit function from second to third order.”

3. Have you done any study on non-flow estimate for these flow measurements, eg TPC vs EPD-EP and TPC with various eta-gaps? Some estimate could be quoted in the paper.

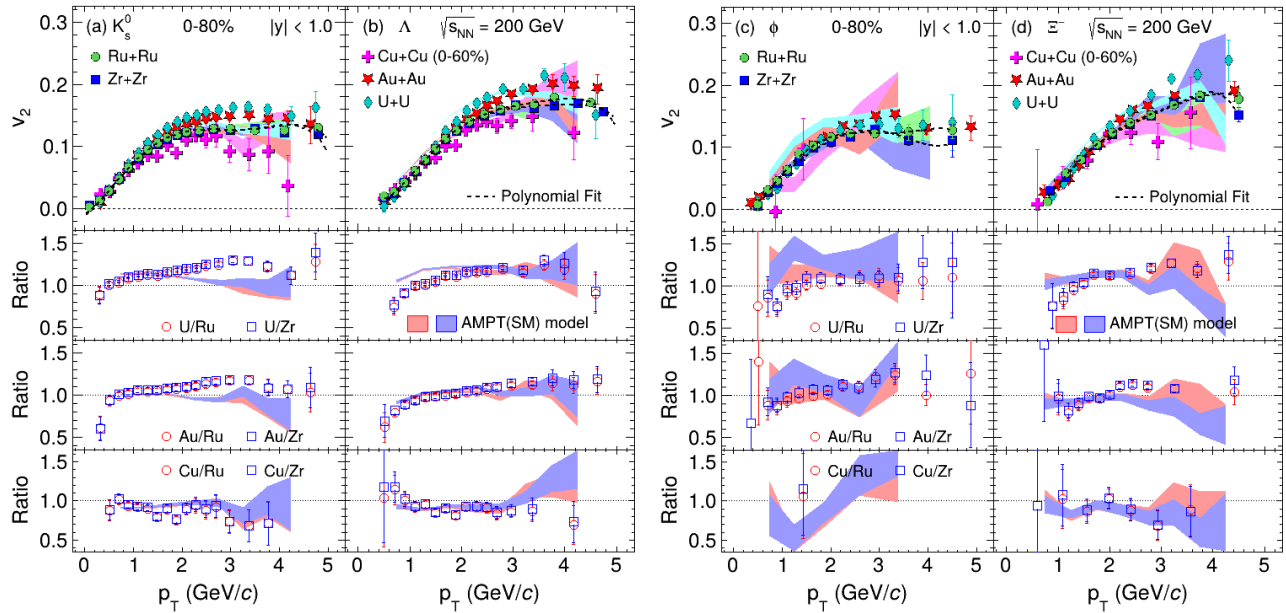
Reply: No, we have not done any non-flow estimation from TPC vs EPD-EP and TPC with various eta-gaps. We have used TPC-EP with the eta gap of 0.1 to reduce non-flow. Also, we are comparing the $v_2(p_T)$ among different collision systems at $\sqrt{s_{NN}} = 200$ GeV which also does not have a non-flow estimation. Therefore, to keep one-to-one comparison, we do not plan to study non-flow estimation.

4. What is the reported uncertainty fit of the integrated v_2 ratios between two isobar systems, is it quadratic sum of systematic and statistical (e.g. p_0 in Fig 7)? Since the two isobars are taken in the same run conditions, some systematic could get cancelled in the ratios between the two systems, are these incorporated?

Reply: Yes, the reported uncertainty on the fit parameter, p_0 , of the integrated v_2 ratios is quadratic sum of systematic and statistical uncertainties in Fig. 7. We have only varied the event, track and topological selection criteria for systematic error analysis which is independent for the two systems. We do not explicitly cancel out any systematic in our analysis.

5. Have you looked at AMPT comparison for different systems (eg Au+Au versus isobars), it would be nice to see if it can capture the some of these v_2 ratios shown in Fig 8.

Reply: We have estimated the $v_2(p_T)$ ratios between isobar and different systems (Cu+Cu, Au+Au, U+U) from the AMPT model as shown in the two figures below. The $v_2(p_T)$ values from AMPT model for different systems only qualitatively describes the data, therefore, the similar feature of v_2 ratio deviating from unity and its p_T dependence is only qualitatively described by the AMPT model calculation.



6. Fig. 11-14, should be moved to the main section around the discussion on signal reconstruction.

Reply: We have moved Fig 11-14 to the main section of the paper draft.