

In this contribution to the ISMD2021 proceedings the authors report on a toy study to assess the resilience of intermittency to detector inefficiencies. The manuscript is suitable for proceedings and meets the requirements, but hard to understand for non-experts. I therefore have a few suggestions that should help to make it more understandable:

Thanks for your comments on the first draft of the proceedings this will certainly help to improve it and convey the scientific message clearly. Apologies for the delay in reply due to some health issues with me. We will update the draft based on your suggestions and upload the second version on arxiv. Please find below our responses to your comments

1) In the introduction say fluctuations/NFM of which quantity are considered? I understand it is particle multiplicity, right?

Reply: Yes, you are right it is Normalized factorial moments (NFM) of bin multiplicity. In seventh line after [2,4] we will update it as;

Normalized factorial moments (NFM) of bin multiplicities as function of varying bin size.....

2) Define the symbols (e.g. q , F_q , $f_{q_i}^{rec}$).

Reply: q is the order of the moment, F_q is NFM, we will mention this in the first three lines of Page 2. Yes we missed to mention $f_{q_i}^{rec}$. Will include what $f_{q_i}^{rec}$ after Eq.(3) as;

Where superscript rec in $f_{q_i}^{rec}$ corresponds to reconstructed f_{q_i} of reconstructed data in experiment.

3) Some technical details like using the system clock as seed for the random number generator and which function in Root was used can be left out to create a bit of space.

Reply: Thanks for this suggestion to create space.

4) Second to last sentence before eq. (1): What is meant by 'in the interval of 2'?

Reply: It means that we are varying M i.e. number of bins in the phase space from 4 upto 82 in the interval of 2 as 4, 6, 8, 10,..... 82

However its not that important and obvious from figures, we can remove this.

5) In section 3: a dependence of F_q on M is expected (cf. eq. (2)), or? In the manuscript it sounds as if this was surprising.

Reply: This is mentioned in section 1 that for dynamical fluctuations $F_q \geq 1$ and F_q shows power law dependence on M with increasing M . Like in this case, we are adding fluctuations (by increasing particle densities in certain bins) artificially in the phase space.

With Eq (2) we will include this as:

$F_q(M)$ has power law dependence M as $F_q \propto M^{\phi_q}$ (ϕ_q known as intermittency index and is >0) in case there are fluctuations in the bin multiplicity.

6) Do the efficiencies ϵ depend on η and ϕ for the NU sample?

Reply: Because of shortage of space, everything has to be limited in 3 pages, the definition of efficiency is not much clear from text which is

$$\text{Efficiency} = \frac{\text{Number density of bins} \in \text{Reconstructed sample}}{\text{Number density} \in \text{the true sample}}$$

ϵ or efficiency depends on how robust is the reconstruction technique and/or detector's capability to detect particles. For a detector which detects/measures uniformly in the whole acceptance

regions, where it is effective, the efficiency value will be same and this technique of looking for fluctuations is robust against detector efficiencies in that case.

Here with TMC, to have NU sample for reconstructed data assuming that the detector has not equal probable measurements at all acceptance regions, reconstructed sample is created by taking out tracks unequally i.e. removing track from some specific η , ϕ value so that we get a case of non-uniform or non-binomial ϵ . Thus efficiencies are not function of (η, ϕ) as such