

Dear Reviewer,
we are grateful for useful and constructive comments and suggestions. Below is our response to them (in red color).

Authors.

Baldin ISHEPP Seminar asked for changes. 12 January 2024

The paper requires changes.

Comment

Ваша статья требует доработки. Пожалуйста сделайте изменения и перезагрузите файлы вместе с ответом рецензенту.

The manuscript is well written and requires minor corrections.

English proofreading is required.

Abstract Multi-Purpose Detector (MPD)

Changed.

L11 MPD experiments -> MPD experiment

Changed.

L17 attractive features -> attractive properties

Done.

L19-22 Nevertheless, the task of extracting the signal with low background contamination is very important in early stages of the experiment when data availability is limited or for high precision measurements.

Done.

L25-26 The approaches to this task are described below and the results obtained are -> The approaches for this task are described below and the obtained results are

Done.

L38 offers an effective -> provides an effective

Done.

L41 at transverse - > for transverse

Done.

L41-43 TPC - TPC gas - > remove TPC gas

Done.

L43-47 very long sentence - needs to be rewritten

Now: "Identification of charged particles in the intermediate momentum region can not be efficiently done by only dE/dx measurements in the TPC. It will be improved by the time-of-flight (TOF) system, composed of multi-gap resistive plate chambers (MRPC) and located outside the TPC." caption for the Fig~1a distV0 -> dcaV0

Done.

Fig1b - what is the point of showing combinatorial background without normalization?

Two-fold: the like-sign histogram shows that the constant scale factor will not give a good representation of the "normal" background, while the mixed one demonstrates the gain in statistics.

L80 event mixing procedure - how did you make sure that the event classes are the same?

The presented procedure does not require the mixed events to be from the same classes, i.e. it mixes events with different centralities and different positions of the primary vertex. The difference in the positions is accounted for through the track parameter adjustment.

L102-103 The fact of the scale linearity allows creating the following procedure for constructing the mixed background as illustrated in - The fact of scale linearity allows the creation of the following procedure for building the mixed background, as shown in

Done.

L 128 m_{inv} or M_{inv} or $M_{p+\pi}$?

M_{inv}

L126-130 the sentence is very long

Split into two.

Fig 5 - why does the efficiency increase after 3 GeV/c ?

The efficiency increases after 3 GeV/c due to some feature in the particle identification procedure. Namely, all positive tracks with the momentum above 3 GeV/c were considered to be protons.