Contribution ID : **784** Type : **Poster**

Removal of secondary particle contribution from moments of particle distributions with Identity Method

Monday, 5 October 2020 19:45 (15)

The Identity Method (IM) is a mathematical tool that allows one to solve the problem of misidentification in the analysis of moments of particle distributions. This method was successfully used for corrections of the first and second moments in NA61/SHINE and ALICE experimental data. In this work, it is shown how the Identity Method could be used in a non-standard way, namely, for correction of the second moments on contamination by secondary particles coming from weak decays and detector material. For that, distributions of a distance of the closest approach (DCA) of the tracks to the primary vertex are utilized. Thereby, fluctuations and correlations of primary particles can be accessed. Such a correction is essential when there is no inner tracker in an experiment and, therefore, a fraction of the secondary particles, which pass the selection criteria, is large. In particular, this is relevant for the 1st phase of the MPD experiment. The performance of the method is demonstrated with the realistic events generated in Monte-Carlo models with the detector response simulated in GEANT. This work is supported by RFBR research project No. 18-02-40097.

Primary author(s) : ALTSYBEEV, Igor (St.Petersburg State University); PETROV, Vitalii (Saint Petersburg University)

Presenter(s) : PETROV, Vitalii (Saint Petersburg University)

Session Classification : Poster session

Track Classification : Heavy Ion physics