

# Quark Matter 2019 - the XXVIIIth International Conference on Ultra-relativistic Nucleus-Nucleus Collisions



Contribution ID: 762

Type: **Poster Presentation**

## MC study of the reconstruction of $\pi^0$ in MPD/ECal

*Monday 4 November 2019 17:40 (20 minutes)*

The main goal of NICA/MPD is to investigate the hot and dense baryonic matter in heavy-ion collisions over a wide range of atomic masses, from  $Au + Au$  collisions at a center-of-mass energy of  $\sqrt{s_{NN}} = 11 GeV$  (for  $Au^{79+}$ ) to proton-proton collisions with  $\sqrt{s_{pp}} = 20 GeV$ .

Electromagnetic calorimeter (ECal) is an important detector of the MPD to identify electrons, photons and measure their energy with high precision. The performance of the ECal is simulated and analyzed as a function of many parameters such as the multiplicity, energy spectrum, kinematics.  $\pi^0$  signal can be reconstructed from two photons and it is a very important probe to give information of the chiral symmetry restoration and flow signal. The shape of reconstructed  $\pi^0$  mass spectra is analyzed. Dependence of the  $\pi^0$  reconstruction efficiency from the decay parameters is studied.

Theta angle reconstructed in the ECal has a clear deviation from real angle as a function of Z position of the interacting point. This theta angle bias is caused by the small deviation from projective geometry for the Z position which is not equal to zero. This bias is corrected and applied to the reconstruction of  $\pi^0$ , which improved the results of the reconstruction of  $\pi^0$ .

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**Session Classification:** Poster Session

**Track Classification:** Future facilities and instrumentation