

Measurement of neutral mesons in Pb-Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV with PCM in ALICE

Neutral mesons can provide important information on the energy loss of partons traversing the hot and dense state of matter, which is created in high energy heavy-ion collisions.

Furthermore, they constitute the largest background contribution for direct photons, which are also a very important tool to study the properties of the Quark Gluon Plasma.

In the ALICE experiment, neutral mesons can be measured via their decay to two photons.

Apart from the two calorimeters EMCal and PHOS, photons can be reconstructed also via the Photon Conversion Method (PCM).

The latter exploits the fact that a photon can convert to an electron-positron pair.

These charged particles can be detected via their tracks in the Time Projection Chamber (TPC) and the Inner Tracking System (ITS).

The PCM allows the measurement of both photons and neutral mesons, carrying low transverse momenta (down to $p_T \approx 1$ GeV), with very good energy resolution.

Apart from presenting the performance of the photon conversion method, first results on the π^0 and η meson production in Pb-Pb collisions

with a center-of-mass collision energy per nucleon of $\sqrt{s_{\text{NN}}} = 5.02$ TeV will be shown.

Preferred Track

Electromagnetic Probes

Collaboration

ALICE

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