

ϕ meson production in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ALICE at the LHC

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Quantum Chromodynamics predicts the occurrence of a phase transition from the hadronic matter to a plasma of deconfined quarks and gluons (Quark-Gluon Plasma) at extreme conditions of temperature and energy density. Ultrarelativistic heavy-ion collisions provide the means to study this phase of matter in the laboratory.

Strangeness production is a key tool to understand the properties of the medium formed in heavy-ion collisions: an enhanced production of strange particles was early proposed as one of the signatures of the QGP. The ϕ meson, due to its $s\bar{s}$ valence quark content, provides insight into strangeness production.

The ALICE experiment has measured ϕ meson production in the dimuon channel in the forward rapidity region $2.5 < y < 4$ in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV.

The preliminary ϕ meson p_T spectra for different centrality classes and the yield as a function of the collision centrality in the transverse momentum range $2 < p_T < 7$ GeV/c are presented. These results are also compared with the ones previously obtained in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV.

Preferred Track

QCD at High Temperature

Collaboration

ALICE

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