

Direct Photon Production in Pb-Pb Collisions Measured with ALICE

Hot and dense nuclear matter produced in relativistic heavy-ion collisions has been extensively studied in the past decades. The space-time properties of such nuclear matter can be comprehensively described by Quantum Chromodynamics (QCD). At LHC energies, QCD predicts a phase transition to Quark-Gluon Plasma (QGP). Hence, the number of experimental observables have been established to study QGP, including direct photon that comes from thermal expansion of QGP. Photons are not coupled with the strong interaction, which makes them one of a key probe of QGP, especially at the earliest stages of its evolution. In the ALICE experiment, it is possible to measure photons down to 0.4 GeV/c of transverse momentum (p_T) with the tracking system using photon conversion to e^+e^- pairs in the detector material. Photons of higher p_T are measured with EMCal and PHOS electromagnetic calorimeters. We report the results of the ALICE experiment on the direct photon production in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV and $\sqrt{s_{NN}} = 2.76$ TeV.

Section

Heavy ion collisions at Intermediate and high energies

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