

Recent neutral meson and direct photon measurements with ALICE

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The invariant cross sections of π^0 and η mesons provide strong constraints to the nuclear structure of the colliding particles, while the spectra of direct photons in heavy-ion collisions carry undistorted information about the thermodynamic evolution of the quark-gluon plasma (QGP). In addition, Hanbury Brown and Twiss (HBT) correlation of direct photons can shed light on the time-space properties of QGP at its earliest stages. At the ALICE experiment, photons are reconstructed with the photon conversion method using the tracking system, and are directly detected in the electromagnetic calorimeters. The combination of these methods allows the measurement of direct photons over a wide transverse momentum (p_T) range, covering both thermal direct photons and prompt direct photons. Light neutral mesons, in their turn, are measured via the invariant mass of their decay products. Moreover, the merged cluster approach in calorimeters provides the ability to measure π^0 mesons at unprecedentedly large p_T (up to 200 GeV/c). In this report, recent results of the ALICE experiment on light neutral meson in pp collisions at $\sqrt{s} = 13$ TeV and direct photon measurements as well as the HBT correlation of direct photons in Pb–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV are presented.

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