

# 11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



Beitrag ID: 46

Typ: Talk

## Direct-photon production and HBT correlations in Pb–Pb collisions at 5.02 TeV with the ALICE experiment

*Donnerstag, 30. März 2023 09:00 (20 Minuten)*

Measurements of direct photons can provide valuable information on the properties and dynamics of the quark-gluon plasma (QGP) by comparing them to model calculations that describe the whole evolution of the system created in heavy-ion collisions, from the initial conditions to the pre-equilibrium, QGP, and hadronic phases. In the ALICE experiment, photons can be reconstructed via conversion photons using the excellent tracking capabilities, or via direct measurements in the two different types of calorimeters. Combining these different methods we can measure the direct-photon production from lower momentum of 0.4 GeV/c. Exploring the Hanbury Brown and Twiss (HBT) correlation measurement, we can correlate one conversion photon and one calorimeter photon with near-zero opening angle.

In this talk, we will present the first measurements in selected centrality classes of the direct-photon production in Pb–Pb collisions at 5.02 TeV collision energy, as well as the measurements of the photon HBT correlation. The ALICE upgrades will allow us to measure direct photons in the upcoming Run 3 of the LHC and further improve the direct-photon measurements in the ALICE experiment.

### Experiment/Theory

ALICE

### Affiliation

ALICE

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**Sitzung Einordnung:** Parallel: Electromagnetic & Electroweak Probes

**Track Klassifizierung:** Electromagnetic and electroweak probes