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Low-mass dielectron measurements with ALICE at the LHC

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Dileptons and photons are unique tools to study the space-time evolution of the hot and dense matter created in ultrarelativistic heavy-ion collisions. They are produced continuously by a variety of sources, in particular prompt and thermal photons and semi-leptonic heavy-flavour hadron decays, during the entire history of the collision and traverse the medium with negligible final state interaction. So they can carry undistorted information on early stages of the collision.

In this contribution, we will present results from the recent measurements of e^+e^- pair production in pp and p-Pb collisions at the center-of-mass energy $\sqrt{s_{NN}} = 5.02$ TeV. Charm and beauty cross sections are extracted to investigate possible cold nuclear matter effects such as shadowing by comparing different nPDFs on the nuclear modification factor R_{pPb} . New results obtained in Pb-Pb collisions at the same center-of-mass energy will be also shown.

The expected performance of dielectron measurements with the upgraded ALICE detector beyond LHC Run 3 will also be discussed.

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