



Contribution ID: 126

Type: **bullet talk (poster)**

Dielectron production in pp and p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV

Monday, January 11, 2021 7:40 PM (1h 30m)

Dileptons are a prime probe of the deconfined state of strongly interacting matter, the quark-gluon plasma (QGP), produced in high-energy heavy-ion collisions, as they are not affected by strong interactions after their creation.

A measurement of the thermal radiation from the QGP in the mass region between the ϕ and the J/ψ allows to estimate the medium temperature. In this region the main component of the dielectron continuum is originating from correlated semileptonic decays of open-charm and beauty hadrons.

The production of dielectrons originating from the decays of heavy-flavour hadrons in small systems can provide crucial insight for the measurement of thermal radiation in nucleus-nucleus collisions.

In this talk, the latest results on dielectron production in pp and p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV will be presented.

We will discuss the production of heavy-flavour quarks in pp collisions compared with model predictions including different quark production mechanisms, as well as a possible modification of their production cross sections in p-Pb collisions. The data from both collision systems will be presented in terms of the dielectron nuclear modification factor R_{pPb} .

Possible deviations from the vacuum baseline will be addressed in the light of present cold nuclear matter effects along with possible collective effects in small systems.

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Session Classification: Poster

Track Classification: The initial stages of heavy-ion collisions