

Separating prompt and non-prompt contributions in the dielectron mass spectrum in pp collisions at $\sqrt{s} = 7$ TeV with ALICE

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 secondary hard interactions. A measurement of the thermal radiation from the QGP in the dielectron intermediate mass region allows to estimate the medium temperature. In this region the main component of the dielectron continuum is due to correlated semi-leptonic decays of B- and D-mesons.

The proper decay length for B-mesons is $c\tau \approx 500 \mu\text{m}$ and for D-mesons it is $100\text{-}300 \mu\text{m}$, hence the reconstructed decay electrons do not point to the primary vertex of the collision.

Combining the measured distance of closest approach (DCA) of each single electron into a pair variable DCA_{ee} gives the possibility to separate prompt and non-prompt dielectron pairs.

The analysis in pp collisions allows to study the feasibility of extracting the heavy-quark production with the current Inner Tracking System detector of ALICE and provides a reference for Pb-Pb collisions.

In this poster, preliminary results on the DCA_{ee} spectra in pp collisions at $\sqrt{s} = 7$ TeV will be shown and compared to reference distributions from MC simulations.

Preferred Track

Electromagnetic Probes

Collaboration

ALICE

Primary author: SCHEID, Horst Sebastian (Johann-Wolfgang-Goethe Univ. (DE))

Presenter: SCHEID, Horst Sebastian (Johann-Wolfgang-Goethe Univ. (DE))

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