

The charm of hot matter - charmonium and open charm measurements in Pb-Pb collisions with ALICE at the LHC

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Among the various suggested probes of deconfinement, charmonium states play a distinctive role. J/ψ is the first hadron for which a clear mechanism of suppression (melting) in deconfined matter was proposed early on, based on the color analogue of Debye screening. The ALICE measurements of J/ψ production in Pb-Pb collisions are performed as a function of collision centrality, transverse momentum and rapidity. The nuclear modification factor of J/ψ production shows that, at the LHC, there is an enhanced relative production at low transverse momentum compared to that at lower energies. Corroborated with the measurements of open charm hadrons, which will also be discussed, the charmonium results hint at a production in a thermalized hot medium. Comparisons to model predictions indicate that J/ψ production occurs in deconfined matter or at hadronization.

Presentation Type

Invited talk

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