

Heavy-flavour results from the CERN-LHC

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Heavy quarks (charm and beauty) are sensitive and penetrating probes to study the dynamical properties of the Quark-Gluon Plasma (QGP). This state of matter can be recreated, at sufficiently high temperatures or energy densities, and carefully studied in the laboratory in high-energy heavy-ion collisions. Due to their large mass, heavy quarks are produced predominantly in the (hottest) initial phase of the collision via gluon fusion processes and therefore allow to explore the complete space-time evolution of the QGP matter. Theoretical models based on perturbative QCD predict that heavy quarks should experience smaller energy loss than light quarks, when propagating through the QGP matter, due to the mass-dependent suppression of gluon radiation at small angles (the so-called dead-cone effect). Of particular interest is the quantitative understanding of fundamental quantities such as the transport coefficients.

In this talk selected highlights on open heavy-flavour production in lead-lead collisions at CERN's Large Hadron Collider will be presented and discussed.

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