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Probing the Quark-Gluon Plasma at the LHC with heavy flavor observables

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The energy loss and degree of thermalization of charm and beauty quarks in a quark-gluon plasma is one of the key observables to probe this medium. Spectra and azimuthal anisotropies of open charm hadrons are reported on and first results on open beauty are becoming available. Of crucial relevance are also the total charm and beauty production cross sections. Quarkonia habe long been considered a probe of deconfinement. The large charm production cross section at the LHC leads to a new production mechanism of charmonia from deconfined charm quarks, as has been predicted well before the start of the LHC. The increasingly precise data follow this prediction. Data on charmonia and bottomonia production at the LHC will be discussed for pp, pPb and PbPb collisions.

Summary

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