

Unified description of p_T dependent Upsilon suppression in hot QCD matter

Bottomonium are produced in the heavy ion collisions and their production is modified compared with elementary collisions. This modification in the production of bottomonia happens due to the presence of hot and dense QCD matter, named as quark-gluon plasma (QGP) formed in ultra relativistic heavy ion collisions. We present here a comprehensive model based on color screening, collisional damping due to exchange of soft gluons between the $b\bar{b}$ pair and gluonic dissociation caused by absorption of gluon which led $b\bar{b}$ pair transition from color singlet to color octet state. We have also taken cold nuclear matter effect, mainly shadowing effect, in our consideration as it modifies the quarkonia production in heavy ion collisions. We employ the above model to analyze the data on Upsilon suppression measured in terms of nuclear modification factor, R_{AA} versus transverse momentum, p_T , and centrality obtained from Pb+Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV LHC energy. We find that our model describes the LHC data reasonably well.

Preferred Track

Quarkonia

Collaboration

Not applicable

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