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Quarkonia production in relativistic heavy ion collisions

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Using the hydrodynamic model to describe the dynamics of heavy ion collisions, we have studied quarkonia production in these collisions by including both their dissociation in initial cold nuclear matter and subsequently produced quark-gluon plasma [1-3]. For the latter, we used the screened Cornell potential and the next-to-leading order perturbative QCD to determine, respectively, their in-medium properties and dissociation cross sections. The theoretical results for the dependence of the quarkonia nuclear modification factors on the collision centrality as well as the quarkonia transverse momentum were compared with the experimentally measured values at SPS, RHIC and LHC. Useful information on the properties of quarkonia in the quark-gluon plasma has been obtained.

References

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