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Charmonium Production in Heavy-Ion Collisions - Revisited¹ XINGBO ZHAO, RALF RAPP, Physics Department and Cyclotron Institute, Texas A&M University — We revisit the traditional picture of charmonium suppression as a signature of the Quark-Gluon Plasma (QGP) formation in heavy-ion (A-A) collisions. Our quantitative calculations are based on a kinetic rate-equation approach which includes both suppression and regeneration mechanisms in a thermal fireball. Initial conditions are obtained from experimental data in p-p and p-nucleus collisions. Specifically, we study transverse momentum (p_t) and longitudinal momentum (rapidity y) spectra of charmonia in A-A collisions. These are believed to provide a valuable discrimination power of suppression and regeneration mechanisms, and thus reveal properties of charmonia in the QGP. We present the numerical results and compare to experimental data at SPS and RHIC energies and give predictions at LHC energy.

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