

XVth Quark Confinement and the Hadron Spectrum



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K_1/K^* enhancement in heavy-ion collisions and the restoration of chiral symmetry

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We extend the recent study of K_1/K^* enhancement as a signature of chiral symmetry restoration in heavy ion collisions at the Large Hadron Collider (LHC) via the kinetic approach to include the effects due to non-unity hadron fugacities during the evolution of produced hadronic matter and the temperature-dependent K_1 mass. Although including non-unity pion and kaon fugacities reduces slightly the K_1/K^* enhancement found in previous study due to chiral symmetry restoration, adding temperature-dependent K_1 mass leads to a substantial further reduction of the K_1/K^* enhancement. However, the final K_1/K^* ratio in peripheral collisions still shows a factor of 2.4 enhancement compared to the case without chiral symmetry restoration, confirming its use as a good signature for chiral symmetry restoration in the hot dense matter produced in relativistic heavy ion collisions.

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