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Significant in-medium reduction of the mass of $\eta\prime$ mesons in $\sqrt{s_{\rm NN}} = 200$ GeV Au+Au collisions

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It is argued that the $\mathrm{U_A}(1)$ or chiral symmetry may temporarily be restored in a hot and dense medium that is created in high energy heavy ion collisions. As a consequence, the mass of the $\eta\prime$(958) mesons may be reduced to its quark model value, and the abundancy of the $\eta\prime$ mesons at low p_T may be significantly enhanced. PHENIX and STAR data on the intercept parameter of the two-pion Bose-Einstein correlation functions in $\sqrt{s_{NN}} = 200$ GeV Au+Au collisions were analysed in terms of various models of hadronic abundances. To describe these data, an in-medium $\eta\prime$ mass reduction of at least 200 MeV was needed in each case [1].

[1] http://arxiv.org/abs/0905.2803

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