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Interference of thermal photons in relativistic heavy ion collisions

Content :

We explore the intensity correlations for thermal photons having $K_T \le 2$ GeV/c, for central collisions of heavy nuclei at RHIC and LHC energies. The photons get competing contributions from the quark matter and hadronic matter phases in this momentum range. This competition gives rise to a unique structure, especially in the outward correlation function, due to the interference between the photons from the two sources. The temporal separation of the two sources provides the life time of the system and their strengths provide the relative contributions of the two phases. The results are found to be quit sensitive to the quark-hadron phase transition temperature and the formation time of the plasma.

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