

QCD VACUUM AS ENVIRONMENT FOR COLOUR PARTICLES

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Stochastic vacuum of quantum chromodynamics (QCD) might be treated as an environment for colour states. Here the interaction of an arbitrary colour superposition with QCD stochastic vacuum is considered. On the basis of the acquired results the implications for quark confinement are being made. Generalization for multiparticle states (including the case of entangled states) is proposed. Characteristics from quantum optics and quantum information theory (such as purity, fidelity and von Neumann entropy) are being used to evaluate the process of interaction of colour states with QCD vacuum.