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Influence of relativistic rotation on QCD properties within lattice simulation

This report is devoted to our study of QCD properties effected by relativistic rotation. The study is carried out within lattice simulations which are performed in the reference frame rotating with the system under investigation. First we focus on rotating gluodynamics. We found that the critical temperature of the confinement/deconfinement transition in gluodynamics grows quadratically with increasing angular velocity. In addition, we present our first results on rotating QCD matter with dynamical fermions. The results indicate, that the effect of the rotation on fermions is opposite to gluons: it leads to the decrease of the critical temperature.

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