Excited QCD 2016



Contribution ID: 95 Type: not specified

A real time lattice simulation of the thermalization of QGP: first results

Thursday 10 March 2016 18:30 (30 minutes)

An ab initio understanding of the thermalization of QGP is a formidable task that one would like to comprehend starting from QCD without model assumptions. We study the early stage dynamics of a relativistic heavy ion collision in the framework of real time classical simulations of QCD with the Color Glass Condensate as initial conditions. Our study aims to generalize a previous one by Fukushima and Gelis from SU(2) to SU(3). We focus on the chromo-electric and chromo-magnetic energy densities as well as the ratio of the longitudinal to the transverse pressure which provide evidence of the thermalization. We show preliminary results on coarse lattices, indicating the occurrence of Weibel instabilities before thermalization.

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Session Classification: Thursday Afternoon