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The quark-gluon plasma production from the QCD ground state in the Hamiltonian picture

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A semi-classical Hamiltonian approach can be used to describe the quark-gluon plasma (QGP) production mechanism in heavy-ion collisions in real physical time based upon the existence of a homogeneous initial state being a non-trivial QCD ground-state. An effect ala parametric resonance leading to a decay of the homogeneous gluon condensate into inhomogeneous gluon plasma can be thought as a possible driver of QGP production in QCD as well as its hadronisation. I will elaborate on physical significance and the possible new signatures of this mechanism relevant for heavy-ion phenomenology.

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