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# Unstable dynamics of Yang-Mills fields at early times of heavy ion collisions

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The quark gluon plasma as produced in heavy ion collisions is exposed to early anisotropies in momentum space due to its rapid expansion. Such anisotropies can lead to unstable gluonic modes that can grow exponentially fast.

In this talk, I present the 3+1 dimensional simulations of non-Abelian plasma instabilities. The simulations are based on gaugecovariant Boltzmann-Vlasov equations that include the Yang-Mills fields for gauge group  $SU(3)$ . A turbulent cascade forms in the strong-field regime, which is associated with an approximately linear growth of energy in collective fields.

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