Synchrotron radiation in a transverse chromo-magnetic field

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Abstract

The heavy ion collision is an environment where gluon saturation is achieved and probably forming a gluon dominated region "the Glasma". The gluons forms a semi-classical background that can be approximated by a uniform field. Partons escaping the collision and moving across the high density gluon region is behaving in a way similar to synchrotron radiation. We present a geneneralisation of QED synchrotron radiation to the QCD case with a chromo-magnetic field using the Schwinger's source method. It is shown that the QED case can be obtained as a special limit.