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Color Glass Condensate and its implication

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I will briefly explain the basic concepts behind the physics of Color Glass Condensate (CGC), which appears as the universal state of hadrons and nuclei in very high-energy scatterings. The CGC is made of high density gluons which have only a small fraction of the total momentum, and is characterized by coherent strong gauge fields. Its density is saturated (typically of the order of $1/\alpha_s$), which is induced by recombination process of two gluons into one (that is relevant when the gluon density is high). Theoretically, the CGC can be described by the weak-coupling technique since the typical transverse momentum of gluons, “saturation momentum,” Q_s becomes large enough at high energies. I will also discuss some phenomenological implications of the CGC picture to the RHIC experiments.