From Glasma to Plasma in Heavy Ion Collisions

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We first present an overview of our present understanding of strong color fields in in nucleon and nuclear wavefunctions at high energies. We then outline how these degrees of freedom are released in nuclear collisions to form the Glasma. Results of numerical simulations and theoretical studies describing the properties of the Glasma are discussed. Theoretical investigations of the subsequent thermalization of the Glasma to a Quark Gluon Plasma are described with particular emphasis on the origin and role of plasma instabilities. We explore the possible relation of the early time Glasma dynamics to certain striking features of the RHIC experiments.