Enhanced Diagrams in Parton-Based Gribov-Regge Theory

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Abstract

We recently proposed a new approach to high energy nuclear scattering, which treats the initial stage of heavy ion collisions in a sophisticated way.Demanding theoretical consistency as a minimal requirement for a realistic model, we provide a solution for the energy conservation, screening and shadowing problems, the so-called "Parton-Based Gribov-Regge Theory" including enhanced diagrams.

In order to keep a clean picture, we do not consider secondary interactions. We provide a very transparent extrapolation of the physics of more elementary interactions towards nucleus-nucleus scattering, without considering any nuclear effects due to final state interactions. In this sense we consider our model a realistic and consistent approach to describe the initial stage of nuclear collisions.

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