Contribution ID: **61**   Type: **not specified**

Parton shower algorithm based on the small-x evolution equation

Wednesday, 29 May 2024 17:30 (30 minutes)

We develop a novel parton shower algorithm based on the Gribov-Levin-Ryskin (GLR) evolution equation incorporating the gluon fusion effect to simulate the small- gluon cascade. The formulations of both forward and backward evolution for the GLR equation are presented in our work, and the results from the Monte Carlo implementation of the GLR equation are in complete agreement with its numerical solutions. It provides a vital tool to describe fully exclusive hadronic final states in collisions at the future electron-ion collider. This work thus paves the way for developing an event generator that embodies the saturation effect.

Primary authors: ZHOU, Jian (Shandong University); SHI, Yu

Co-author: WEI, Shuyi (Shandong University)

Presenter: SHI, Yu

Session Classification: Wednesday