Contribution ID: **46**   Type: **1st and 2nd weeks (Hadron structure and interactions)**

Modified homotopy approach for diffractive production in the saturation region

Thursday, October 17, 2024 4:30 PM (30 minutes)

We present the results of using the homotopy method to solve the nonlinear evolution equation for diffractive production in deep inelastic scattering (DIS). Initially, we introduce part of the nonlinear corrections as the first step in this approach. This allows for an analytical solution to the simplified nonlinear evolution equation, taking into account the initial and boundary conditions. In the next step, we demonstrate that the perturbative procedure can be employed to address the remaining nonlinear corrections. The results show that these corrections are small and can be effectively estimated using a regular iterative procedure.

Primary authors: CONTRERAS, Carlos (Universidad Técnica Federico Santa María);   LEVIN, Eugene (Tel Aviv University);   GARRIDO, José (Universidad Técnica Federico Santa María);   MENESES, Rodrigo (Universidad de Valparaíso)

Presenter: GARRIDO, José (Universidad Técnica Federico Santa María)

Session Classification: 1-day Workshop (1st week)