

Joint 20th International Workshop on Hadron Structure and Spectroscopy and 5th workshop on Correlations in Partonic and Hadronic Interactions



Contribution ID: 4

Type: **not specified**

Radiative Corrections in SIDIS: Current Status and Perspectives

Thursday 3 October 2024 09:00 (20 minutes)

The current status and perspectives in the area of radiative correction calculations in semi-inclusive hadron leptonproduction of polarized particles are discussed. Recent progress in exact and leading log calculations, Monte Carlo generators, numeric results for kinematics of modern experiments, and the procedure of radiative corrections of experimental data in real data analyses are discussed. We present the basic steps of radiative correction calculations in SIDIS including the extraction and cancellation of the infrared divergence and the approaches for all-type contributions of the lowest order such as the infrared-free sum of the effects of real and virtual photon emission and the contribution of the radiative tail from exclusive peak. We demonstrate how leading log formulae can be obtained using the standard approaches to the leading log approximation as well as from the exact expressions for the radiative correction of the lowest order, and how the method of the electron structure function is used to calculate the higher order corrections. The results are analytically compared to the results obtained by other groups. Numeric illustrations are given in the kinematics of the modern experiments at Jefferson Laboratory.

Primary author: AKUSHEVICH, Igor

Co-author: Dr ILYICHEV, Alexander

Presenter: AKUSHEVICH, Igor

Session Classification: Thursday Morning