The XXVI International Scientific Conference of Young Scientists and Specialists (AYSS-2022)

Contribution ID: 1021

Type: Oral

Parton distribution functions of positron in electron in QED

Tuesday, 25 October 2022 17:05 (15 minutes)

A method of solving of QED evolution equations for parton distibution functons in the leading and next-to-leading orders is discussed. This method is a reduction to QED of the method of iterative solution of DGLAP equations in QCD. Spacelike parton distributon functions (PDFs) of positron in electron are calculated to the third order. We consider process-independent PDFs $D_{e\bar{e}}$ which describe the probability density of finding massless partons (positron) inside electron. The results can be used to calculate cross-sections of high-energy processes with electrons and positrons, such as electron-positron annihilation and scattering. These results are important for precise calculation of radiative corrections in QED and accurate predictions of high-energy processes on future colliders.

Primary authors: VOZNAYA, Uliana (LTP); ARBUZOV, Andrej (BLTP JINR)

Presenter: VOZNAYA, Uliana (LTP)

Session Classification: Theoretical Physics

Track Classification: Theoretical Physics