

Contribution ID: 10

Type: not specified

## Subleading Logarithmic QED Initial State Corrections to $e^+e^- \to \gamma^*/Z^*$

Monday 15 March 2021 23:10 (20 minutes)

Using the method of massive operator matrix elements, we calculate the subleading QED initial state radiative corrections to the process  $e^+e^- \rightarrow \gamma^*/Z^*$  for the first three logarithmic contributions. The calculation is performed in the limit of large center of mass energies  $s \gg m_e^2$ .

These terms supplement the known corrections to  $O(\alpha^2)$ , which were completed recently. The newly calculated radiators can be expressed in terms of harmonic polylogarithms of argument z and (1-z) and in Mellin N-space by generalized harmonic sums.

Given the high precision at future colliders operating at very large luminosity, these corrections are important for concise theoretical predictions.

## **Time Zone**

Europe/Africa/Middle East

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Session Classification: PD1: Theoretical Developments

Track Classification: Physics and Detectors Tracks: PD1: Theoretical Developments