

Electromagnetic deflection at the CEPC Z-pole

In order to realize CEPC potential for precision EW measurement at the Z-pole, integrated luminosity should be controlled with 10^{-4} relative uncertainty. Electromagnetic interaction between incoming and outgoing beams as well as the focusing of final state particles by incoming bunches, affects the effective acceptance of the luminometer in a nontrivial way. Although these effects are more pronounced at linear colliders due to larger charge density of the beam bunches, they need to be quantified and interpreted in terms of luminosity precision at CEPC as well. Here we'll discuss the impact of electromagnetic deflection on the integrated luminosity precision at the CEPC Z-pole.

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