

Systematic limitations to luminosity determination in the LumiCal acceptance from beam-beam effects

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A way to determine luminosity at ILC is to measure Bhabha scattering in the LumiCal. For physics requirements, one needs to reach a precision of 10^{-4} for the luminosity determination and thus the Bhabha cross section. Whereas studies on theoretical uncertainties on the cross section and on mis-identified Bhabhas in the LumiCal are fully performed, bias on Bhabha measurement due to beam-beam effect has never been investigated before. Using GUINEA-PIG, we start to study how electromagnetic deflections due to beam-beam effect play a non negligible role on the Bhabha angular distribution.

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