

Pion charge asymmetries in $e^+ e^- \rightarrow \pi^+ \pi^- \gamma$ below 1 GeV

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Abstract content

Summary

We calculate the forward-backward pion charge asymmetry for $e^+ e^- \rightarrow \pi^+ \pi^- \gamma$ process. For the final state radiation contribution we include Bremsstrahlung, double resonance and four different models (Kaon Loop Model, Resonance Chiral Perturbation Theory, Unitarized Chiral Perturbation Theory and Linear Sigma Model) for intermediate ϕ decay. We perform a Montecarlo code and compare our results with experimental data. In general, we reproduce the data above 700 MeV (except for Resonance Chiral Perturbation Theory), but none of the models yield a good description of the asymmetry between 400 and 700 MeV.

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