

Radiative corrections for the decay $\Sigma^0 \rightarrow \Lambda e^+ e^-$

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Electromagnetic form factors serve to explore the intrinsic structure of nucleons and their strangeness partners. With electron scattering at low energies the electromagnetic moments and radii of nucleons can be deduced. The corresponding experiments for hyperons are limited because of their unstable nature. Only for one process this turns to an advantage: the decay of the neutral Sigma hyperon to a Lambda hyperon and a real or virtual photon. Due to limited phase space the effects caused by the Sigma-to-Lambda transition form factors compete with the QED radiative corrections for the decay $\Sigma^0 \rightarrow \Lambda e^+ e^-$. In this talk we address the complete set of the inclusive NLO QED corrections to the Dalitz plot, calculated beyond the soft-photon approximation, i.e., over the whole range of the Dalitz plot and with no restrictions on the energy of the radiative photon.

Abstract Track

Theory

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