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Radiative decays Z_H -> V_i Z in the little higgs models

Abstract content

The study of the phenomenology of an extra neutral gauge boson, Z_H, can give hints of the details of the model from which it arises. We study the decay of such a particle into two neutral gauge bosons, Z_H-> V_i Z (V_i = γ,Z), in two popular versions of the little Higgs model: the littlest Higgs model (LHM) and the simplest little Higgs model (SLHM). These decays are induced at the one-loop level by a fermion triangle and are interesting as they are strongly dependent on the mechanism of anomaly cancellation of the model. All the relevant tree-level two- and three-body decays of the Z_H gauge boson are also calculated. It is found that the branching ratios for the Z_H->V_i Z decays can be as large as that of a tree-level three-body decay in the LHM, though they are more suppressed in the SLHM

Summary

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