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Constraints on Unparticle Physics from the muon anomalous magnetic moment

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Abstract content

The possible existence of a hidden scale invariant sector interacting weakly with the SM fields has been suggested recently by Georgi. Although the study of such a sector involves a very complex mathematical framework, it turns out that its phenomenology can be studied through a low energy effective field theory parametrized by effective operators constructed out of the SM fields and nonphysical fields known as unparticles. In this work we use the latest experimental bound on the muon anomalous magnetic moment to obtain constraints on the unparticle effective couplings. We consider the contributions from scalar, pseudoscalars and vector unparticles. It is found that the resulting constraints depend considerably on the dimension of the unparticle effective operators.

Summary

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