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Weak electric dipole moment of the tau lepton due to scalar unparticle

Abstract content

The study of the tau lepton physics plays a significant role in the present accelerator program. Due to the great variety of the tau decay channels, its phenomenology offers an interesting scenario to search for potential effects of new physics. In particular, the tau weak moments remain unexplored beyond the standard model (SM), which predicts negligible values for these properties. This opens up the possibility that a sizeable weak electric dipole moment (WEDM) can arise in some SM extensions, thereby hinting to new sources of CP violation in the lepton sector. In this work we present a calculation of the contributions of scalar unparticles to the tau WEDM. We also assess the implications of the recent analysis of the CMS collaboration on our results.

Summary

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