

Physical remnant of electroweak theta angles

In addition to the well-known quantum chromodynamical theta angle, we show that the Standard Model has another theta angle which is invariant under arbitrary chiral rotations of quarks and leptons. The new theta angle can be identified with the quantum electrodynamical theta angle, which should be viewed as an independent parameter of the Standard Model, and may be observable in spacetime with non-simply connected features, either beyond the visible universe or in an effective background from a laboratory setup.

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