

Renormalization schemes for mixing angles

Thursday, September 12, 2019 4:00 PM (25 minutes)

The proper renormalization of mixing angles in quantum field theories is a long-standing problem. It is relevant for the renormalization of the quark mixing matrix in the Standard Model and for various mixing scenarios in theories beyond. In this talk we specifically consider theories with extended scalar sectors. We review existing renormalization schemes for mixing angles and introduce new ones based on on-shell conditions or symmetry requirements such as rigid or background-field gauge invariance. Considering in particular the renormalization of the mixing angles in the Two-Higgs-Doublet Model and the Higgs-Singlet Extension of the Standard Model, we compare electroweak corrections within these models for a selection of renormalization schemes.

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