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Analysis of scalar mediated proton decays in non-SUSY SO(10) GUTs

Monday 12 December 2022 14:00 (1 hour)

Any grand unified model is plagued with particles capable of inducing proton decay. Identifying all potential scalar proton decay mediators stemming from different irreducible representations of SO(10), we will show their coupling with the Standard Model fermions, tree-level contributions of the effective strength of $B - L$ conserving ($d = 6$), and $B - L$ violating ($d = 7$) operators to proton decay width expression. Through the computed branching ratio of various decay modes of proton in a realistic SO(10) model based on 10_H and $\overline{126}_H$, we will enumerate distinct features of scalar mediated proton decay including bound on the mass of the proton decay mediators.

Session

Beyond the Standard Model

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