

Realistic $SU(5)$ GUT with lower dimensional representations

Monday 26 June 2023 14:40 (20 minutes)

What is the minimal viable renormalizable $SU(5)$ GUT with representations no higher than adjoints? In this talk I discuss a $SU(5)$ model in which vectorlike fermions $5_F + \bar{5}_F$ as well as two copies of 15_H Higgs fields are introduced in order to accommodate for correct charged fermion and neutrino masses and to reproduce the matter-antimatter asymmetry of the universe. The presented model is highly predictive and will be fully tested by a combination of upcoming proton decay experiments as well as low energy experiments in search of flavor violations.

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Session Classification: Parallel

Track Classification: Particle