

Viable Full Unification of the Standard Model into E_8

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A 10 dimensional model with $\mathcal{N} = 1$ SUSY and E_8 as a gauge group will be presented. It will be shown that through the orbifold $\mathbb{T}^6 / (\mathbb{Z}_3 \times \mathbb{Z}_3)$, only the Standard Model remains after compactification, with feasible Yukawa couplings. Gauge coupling unification can be achieved at $M_{GUT} = 10^7$ with a viable proton lifetime. Therefore the highly predictive extra dimensional GUT model can be within reach of near future experiments.

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