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$N = 1$ trinification from dimensional reduction of $N = 1, 10DE_8$ over $SU(3)/U(1) \times U(1) \times Z_3$ and its phenomenological consequences

Thursday, 26 August 2021 22:55 (20 minutes)

In this talk we will present an extension of the Standard Model that results from the dimensional reduction of the $N = 1, 10D$ E_8 group over a $M4 \times B_0/Z_3$ space, where B_0 is the nearly-Kähler manifold $SU(3)/U(1) \times U(1)$ and Z_3 is a freely acting discrete group on B_0. Using the Wilson flux breaking mechanism we are left in four dimensions with an $N = 1$ $SU(3)^3$ gauge theory. Below the unification scale we have a two Higgs doublet model in a split-like supersymmetric version of the Standard Model, which yields third generation quark and light Higgs masses within the experimental limits and predicts the LSP ~1500GeV. The above is based on our recent work: Phys.Lett.B 813 (2021) 136031, 2009.07059 [hep-ph].

Primary authors: MANOLAKOS, George (NTUA); Prof. ZOUPANOS, George (National Technical University of Athens); Dr PATELLIS, Gregory (National Technical University of Athens)

Presenter: MANOLAKOS, George (NTUA)

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