UM Physics Department

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Title: Quiver Theory and Gravitational Waves

Abstract:

The detection of a stochastic background of gravitational waves can reveal details about first-order phase transitions (FOPTs) at a time of $10^{−13}s$ of the early universe. We specifically discuss quiver-type GUTs which avoid both proton decay and a desert hypothesis. A quiver based on $SU(3)^{12}$ which breaks at a E=4000 GeV to trinification $SU(3)^3$ has a much larger ($g*$=1,272) number of effective massless degrees of freedom than the Standard Model. Assuming a FOPT for this model we investigate the strain sensitivity of this model for a wide range of FOPT parameters.