

International Workshop on Grand Unified Theories: Current Status and Future Prospects



Contribution ID: 90

Type: **not specified**

Gauge unification in 5-D SU(5) model with orbifold breaking of GUT symmetry

We consider a 5-dimensional SU(5) model wherein the symmetry is broken to the 4-dimensional Standard Model by compactification of the 5th dimension on an $S^1/(Z_2 \times Z'_2)$ orbifold. We identify the members of all SU(5) representations upto 75 which have zero modes. We examine how these light scalars affect gauge coupling unification assuming a single intermediate scale and present several acceptable solutions. The 5-D compactification scale coincides with the unification scale of gauge couplings and is determined via this renormalization group analysis. When SO(10) is considered as the GUT group there are only two solutions, so long as a few low dimensional scalar multiplets upto 126 are included.

Author: Prof. BRAHMACHARI, Biswajoy (Vidyasagar Evening College)

Presenter: Prof. BRAHMACHARI, Biswajoy (Vidyasagar Evening College)