

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



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## Towards a Realistic Grand Gauge-Higgs Unification

*Tuesday, 18 December 2007 16:30 (20 minutes)*

We investigate a 5D  $SU(6)$  grand gauge-Higgs unification model compactified on an orbifold  $S^1/Z_2$ . Ordinary quarks and leptons, together with right-handed neutrinos, are just accommodated into a minimal set of representations of the gauge group, without introducing any exotic states. The proton decay turns out to be forbidden at least at the tree level. We also find a correct electroweak symmetry breaking  $SU(2)_L \times U(1)_Y \rightarrow U(1)_{em}$  is easily realized by introducing suitable number of adjoint fermions.

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