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Radiative Left-Right symmetry breaking from flavour enhanced trinification

Thursday 7 July 2016 15:00 (20 minutes)

In this talk I will present our recent work on a non-supersymmetric trinification GUT with a global $\mathrm{SU}(3)$ flavour symmetry. The $\mathrm{SU}(3)$ flavour symmetry solves many of the persistent issues of traditional trinification model building, where models typically contain an uncomfortably large number of free parameters and naturally prefers GUT scale masses for the Standard Model (SM) fermions. In our model, the trinification symmetry group (gauge and global) is spontaneously broken down to the standard Left-Right symmetric gauge group, together with an extra $\mathrm{SU}(2) \times \mathrm{U}(1)$ global symmetry. Upon integrating out the heavy states at this scale, we obtain an effective Left-Right symmetric model which spontaneously breaks to the SM gauge group at a lower scale by means of RG running.

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