



Contribution ID: 143

Type: **not specified**

TALK: Asymptotically Free E_6 GUT and the Generation of Neutrino Mass

Tuesday, July 2, 2024 10:00 AM (45 minutes)

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Grand Unified Theories (GUTs) represent an attractive possibility of physics beyond the Standard Model, with implications for both proton decay and neutrinos. The most studied examples are based on unified groups SU(5) and SO(10), while the exceptional case

remains less understood. In an asymptotically free GUT, model building is essentially limited to the use of irreducible representations of dimension 27 and 78 (the fundamental and the adjoint). I will present ongoing work in non-supersymmetric models regarding the determination of the necessary ingredients for both GUT symmetry breaking and a realistic Yukawa sector. Special attention will be given to the peculiarities associated with neutrino mass generation in this type of models.

Presenter: SUSIČ, Vasja (LNF, INFN)