

Testability of GUTs in neutrino and GW experiments

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Grand Unified Theories (GUTs) aim to unify all fundamental particle interactions including electromagnetic, strong and weak interactions. Thanks to the recent fast progress in neutrino precision measurements and gravitational wave (GW) observations, two complementary tests become more and more important in addition to the traditional proton decay measurements. One is to test correlations of masses and mixing in the quark sector and lepton sector. Another is to measure spectrum of cosmic GW background from cosmic strings, which is predicted in most GUT framework. I will address all these phenomenological constraints on GUTs and further comment on the influence of the recent Pulsar Timing Array measurements.

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