



Contribution ID: 303

Type: Poster

## Addressing flavor anomalies, $(g - 2)_\mu$ , neutrino mass and matter-antimatter asymmetry of the universe within $SO(10)$ GUT with a scalar leptoquark and scalar triplets

Tuesday 13 December 2022 14:00 (1 hour)

Motivated by the recent flavor anomalies we consider the extension of the Standard Model with a scalar leptoquark  $S_1(\bar{3}, 1, 1/3)$  and a scalar triplet to investigate the rare semileptonic  $B$  decays involving quark level transitions  $b \rightarrow c\ell^-\bar{\nu}_\ell$ ,  $(g - 2)_\mu$  anomaly, neutrino mass and matter-antimatter asymmetry simultaneously. The important feature of the work is that it leads to successful gauge coupling unification of fundamental forces when embedded in non-SUSY  $SO(10)$  grand unified theory. We also comment on the feasibility of parameter space that can be probed at low-energy experiments like neutrinoless double beta decay or at high-energy colliders.

### Session

Beyond the Standard Model

**Author:** ADARSH, PRATIK (Indian Institute of Technology Bhilai)

**Co-authors:** Mr MALO, Pritom (Central University of Karnataka); Mr SAHU, Purushottam (Indian Institute of Technology Bhilai); Dr SAHOO, Suchismita (Central University of Karnataka); PATRA, Sudhanwa (IIT Bhilai)

**Presenter:** ADARSH, PRATIK (Indian Institute of Technology Bhilai)

**Session Classification:** Poster - 2