

Neutrino mass and flavor anomalies

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Experimental hints for lepton flavor universality violation in beauty-quark decay both in neutral- and charged-current transitions require an extension of the Standard Model for which scalar leptoquarks (LQs) are the prime candidates. Besides, these same LQs can resolve the long-standing tension in the muon and the recently reported deviation in the electron $g - 2$ anomalies. These tantalizing flavor anomalies have discrepancies in the range of $2.5\sigma - 4.2\sigma$, indicating that the Standard Model of particle physics may finally be cracking. In this talk, we propose a resolution to all these anomalies within a unified framework that sheds light on the origin of neutrino mass. In this model, the LQs that address flavor anomalies run through the loops and generate neutrino mass at the two-loop order while satisfying all constraints from collider searches, including those from flavor physics.

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