

Pati-Salam models and B-meson anomalies

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Recent hints for lepton-flavor non-universality in B -meson decays can be interpreted as hints for the existence of leptoquarks. We show that scalar leptoquarks unavoidably arise in grand unified theories, using the well-known Pati-Salam model as an example. These GUT-motivated leptoquarks can have a number of appealing features including automatic absence of proton decay, purely chiral couplings, and relations between the various leptoquark couplings. We show that $R(K^{(*)})$ can be connected to the neutrino mass matrix that arises via type-II seesaw, resulting in testable lepton flavor violation. In order to also explain $R(D^{(*)})$ one instead has to assume the existence of light right-handed neutrinos, once again with testable predictions in other B -meson decays and at the LHC.

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