

On the Viable Leptoquark Models

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We present the result of the updated study of the viability of the models in which the Standard Model is extended by a single leptoquark state at a TeV scale. We show that one cannot construct a model with one such scalar leptoquark state and be compatible with many constraints arising from the low energy flavor physics data, as well as from the direct LHC searches. Instead, one can combine two and make a sound scenario, of which S1+S3 and R2+S3 are particularly interesting. In the latter case one can also show that the proposed model can be embedded in a viable SU(5) GUT scenario.

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