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Recasting LHC Constraints to Test Leptoquark Models

We are currently investigating the phenomenology of leptoquark models in light of existing constraints from the Large Hadron Collider (LHC). The aim of this work is to revisit the standard literature on leptoquark physics and recast available LHC constraints to assess their implications for the parameter space of these models. In particular, we study the relevant leptoquark production and decay channels and confront their predictions with existing experimental limits. This analysis will allow us to determine the regions of parameter space that remain viable and to assess the sensitivity of current LHC data to leptoquark scenarios. The ongoing study is intended to provide a systematic framework for testing a broad class of leptoquark models using existing collider data and to explore their prospects at current and future LHC runs.

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