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Non-universal Z' models with controlled flavor-changing interactions

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The LHCb collaboration recently reported several anomalies in B meson decays which, taken at face value, imply a large deviation from lepton-flavor universality. Motivated by them, I will present a new class of Z' models based on a non-universal U(1)' extension of the Standard Model gauge symmetry. This model is characterized by the presence of flavor violating Z' couplings in the down-quark sector controlled by off-diagonal CKM matrix elements. Anomaly cancellation conditions fix the extension of the symmetry to the lepton sector in a precise way, introducing flavor-conserving non-universal interactions. The new gauge sector is very predictive and presents an interesting phenomenology, with several smoking-gun signatures that will be tested in the near future.

Primary author(s) : FUENTES-MARTIN, Javier (IFIC, CSIC-Univ Valencia)

Presenter(s) : FUENTES-MARTIN, Javier (IFIC, CSIC-Univ Valencia)

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