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News on FCNC Processes through Horizontal Gauge Bosons

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New neutral heavy gauge bosons appear automatically in many extensions of the Standard Model with an extended gauge sector. Typical examples are Z' and gauge-flavour models in which the flavour symmetry, necessary to explain the Standard Model fermion masses and mixings, or a part of it, is gauged. Often, additional heavy exotic fermions must also be introduced to cancel the anomalies from the new gauge sector. In phenomenologically testable scenarios, the lightest heavy bosons and fermions have masses around the TeV scale and may be directly produced in current colliders. On the other hand, indirect bounds are present since the neutral gauge bosons and exotic fermions affect the FCNC processes. In this talk, we discuss new aspects of phenomenology from such contributions, stressing in particular the role of QCD effects.

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