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Type: **Parallel talk**

Solving anomalies with Dark Matter

Thursday, 22 June 2017 15:30 (15 minutes)

We investigate the constraints on exotic charges of standard model and dark sector fermions coming from the cancellation of gauge anomalies in simplified models of dark matter. Assuming generation-independent charges, we show that the standard coupling structures assumed in such models necessitate the existence of additional exotic fermions. These fermions cannot be arbitrarily heavy, and some have to be charged under the standard model gauge group, introducing interesting experimental signatures.

Recent flavour anomalies reported by LHCb and other experiments can be explained by a Z' with non-universal charges. Relaxing the assumption of generation-independent charges, we explore the constraints that anomaly cancellation imposes on models that can explain the flavour excess without coming into conflict with other flavour observables. We show examples where DM or other exotic fermions are needed to provide a gauge anomaly-free model of the flavour anomaly.

Presentation type

Parallel talk

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