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Muon g-2 and B anomalies from Dark Matter

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We systematically build and discuss a class of models with minimal field content that can simultaneously provide: (i) a thermal Dark Matter (DM) candidate; (ii) large loop contributions to $b \to s\ell\ell$ processes able to address R_K and the other B anomalies; (iii) a natural solution to the muon $g-2$ discrepancy through chirally-enhanced contributions. We show what are the minimal ingredients and properties necessary to explain both anomalies through loop effects directly involving the DM particles and few other new fields. The general characteristic of this class of models is that the DM phenomenology is controlled by the same parameters that enter the flavour observables. As a consequence, they feature a high degree of correlation among DM, flavour and collider searches and thus an enhanced testability. The new particles are generally heavy enough to evade limits set by LHC searches, but could be in the reach of present and future colliders and direct detection experiments.

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