

A fermionic portal to a non-abelian dark sector

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I will present a new class of renormalisable models, labelled Fermion Portal Vector Dark Matter, consisting of a dark $SU(2)_D$ gauge sector connected to the Standard Model through a Vector-Like fermion mediator, not necessarily requiring a Higgs portal, in which a massive vector boson is the Dark Matter candidate. Multiple realisations are possible, depending on the properties of the VL partner and of the scalar potential. These models have a large number of applications with significant implications for cosmology, collider physics and flavour observables, depending on the mediator sector.

Orateur: PANIZZI, Luca (Uppsala University)

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