A new Simplified Dark Matter Model: the Vector-like Portal

Thursday, 20 December 2018 10:00 (1 hour)

The nature of the Dark Matter is a mystery not yet solved and its identification is a big challenge for model builders and experimentalists. Among the plenthora of possible DM candidates, the Weakly Interactive Massive Particle (WIMP) is the most popular solution. In order to demonstrate that this is the valid explanation to the DM problem, a non-gravitational signal and also a model to interpret a possible DM message are needed. I will present a new Simplified Model, called Vector-like Portal, which connects the hidden and the visible sector through a Vector-like fermion and promotes a real scalar Dark Matter. I will show the main features of model and its important consequences in the phenomenological analysis for all three different DM search strategies, when it is coupled to leptons, light and heavy quarks.

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