

Scalars 2017



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Multi-component vector-fermion dark matter with scalar mediator

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Content :

It is possible that dark matter consists of two or more particle species with non-negligible contribution to the relic abundance. This scenario leads to a complicated dynamic in the hidden sector where various processes are responsible for the thermal production of dark matter. We discuss the model with fermionic and vector dark matter candidates that interact with the Standard Model through the Higgs portal. Their masses are generated due to the spontaneous breaking of gauge symmetry in the hidden sector whose remnants stabilize two or three DM components. We indicate the regions in the parameter space, where bounds from direct detection are satisfied and all dark matter components have substantial contributions to the relic abundance.

Primary authors : DUCH, Mateusz (University of Warsaw)

Co-authors :

Presenter : DUCH, Mateusz (University of Warsaw)

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