Scalars 2015

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Vacuum stability from vector dark matter

Content :

We study a model of a vector dark matter coming from the complex scalar Higgs portal
with an additional U(1) gauge symmetry. Renormalisation group equations at the 2-loop
level are used to analyse perturbativity and influence of the dark gauge coupling on
the vacuum stability. We discuss LHC and LEP constraints on the additional Higgs-like
scalar present in the model and bounds coming from the Planck data and direct
detection experiments.

Primary authors : Mr. DUCH, Mateusz (University of Warsaw) ; GRZADKOWSKI, Bohdan
(University of Warsaw) ; Mr. MCGARRIE, Moritz (University of Warsaw)

Co-authors :

Presenter : Mr. DUCH, Mateusz (University of Warsaw)

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