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Fitting the relic density with contributions from dimension-five operators

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We study the relic density and astrophysical constraints of an effective model featuring top-philic scalar dark matter and a heavy T-channel mediator. The addition of a dimension-five contact term which is common to BSM scenarios modifies the available parameter space, and the model features interplay between the associated Wilson coefficient and Yukawa parameter in producing the correct relic density. We present an analytical fit to the relic density, considering co-annihilations when relevant, and discuss the detection constraints.

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

PhD

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