

Dark Matter Production in Hidden Vector Sector

Content

This thesis studies thermal dark matter production in a hidden vector sector where stable massive vector bosons emerge as dark matter candidates. Using Boltzmann equations and numerical simulations, the project analyzes relic density, freeze-out dynamics, and viable parameter space while comparing theoretical predictions with cosmological and direct detection constraints.

Summary

A computational and theoretical study of thermal dark matter production in a hidden vector sector, analyzing freeze-out regimes, Boltzmann dynamics, relic density constraints, and phenomenological viability beyond the Standard Model.

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