

Dark Matter Production in Hidden Vector Sector

Wednesday, 14 January 2026 11:00 (1 hour)

In this talk, I present ongoing work on Boltzmann framework to study dark matter in the Hidden Vector Sector model. The calculation includes all relevant processes at once: WIMP annihilations, SIMP-like, and forbidden channels. By solving the coupled evolution of the dark matter abundance, the dark scalar, and the dark-sector temperature, we can identify how different mechanisms dominate at different stages of the thermal history. This approach reveals new regions of parameter space, clarifies the transition between regimes, and provides reliable relic density predictions in the sub-GeV mass range.

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