

The Search for Dark Matter at Colliders

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The nature of Dark Matter (DM) is one of the most pressing issues in contemporary physics. For over 80 years, astrophysical and cosmological observations have indicated its existence indirectly. If the DM is composed of weakly-interacting massive particles (WIMPs) that were in thermal equilibrium with Standard Model (SM) particles in the early Universe, freeze-out calculations suggest that the WIMP is likely to weigh $O(\text{TeV})$, in which case it could be produced at accelerators, notably the Large Hadron Collider (LHC) at CERN. In this talk, we present the results from recent collider searches and a global likelihood analysis within the Master-Code framework of Dark Matter Simplified Models. We combine constraints from the LHC, cosmological DM density indicated by Planck, and limits on spin-independent and -dependent scattering from direct DM search experiments.

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