

DM@Collider summary plots for snowmass - plans for DM simplified models

Plots that compare results of dark matter searches at collider, direct and indirect detection have been prepared for the European Strategy.

Those plots use as comparison benchmarks the simplified models in the Dark Matter Forum whitepaper [arxiv: 1507.00966], but they are only made for coupling values of order unity [arxiv: 1703.05703].

For Snowmass, we propose to prepare a similar set of plots where the coupling is varied to reach lower values. This will allow us to have a more complete picture of the complementarity of collider DM searches with direct and indirect detection, as well as compare collider results with collaborations that are sensitive to much lower couplings, such as accelerator-based and fixed target experiments.

In this short contribution, I will talk about our plans and briefly introduce the methods that we intend to use, the inputs that would be required by the various future collider experiments, and the summary plots that can be made for dark matter at colliders.

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