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## **New developments in MadDM - lines and loops**

We present a new module of MadDM that enables the complete automation of the computation of loop-induced processes, relevant for indirect detection of dark matter. The interface between MadDM and MadLoop allows for the calculation of any annihilation cross-section of dark matter into  $\gamma X$ , where  $X = \gamma, Z, H$  or a new unstable particle contained in the dark matter model, odd under the dark symmetry. For the first time in dark matter numerical tools, the relevant loop-induced processes are fully automated for any generic NLO dark matter model in the UFO format. These new theoretical predictions are confronted with Fermi-LAT gamma-ray line searches from the galactic centre, which extend the experimental likelihood database of MadDM. We present the validation of this new module by comparing our results to existing analytical formulae available in the literature. We additionally perform an updated scan of an interesting part of the Inert Doublet model parameter space, which is currently hiding from LHC and direct dark matter searches.

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