

Halo-independent bounds on Inelastic Dark Matter

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I will discuss halo-independent constraints on the Inelastic Dark Matter (IDM) scenario, in which a Weakly Interaction Massive Particle (WIMP) state interacts with nuclear targets by upscattering to a heavier state with a mass splitting δ . Such constraints are obtained adopting the single-stream method, that exploits the complementarity of Direct Detections and Neutrino Telescopes (searching for the annihilation signal of WIMPs captured in the Sun) in probing the full range of incoming WIMP speeds. I will show that a non-vanishing mass splitting δ modifies this picture, and that for particular combinations of WIMP mass and δ the complementarity between the two detection techniques required by the method is lost. I will also discuss the issue of thermalization of IDM within the Sun and show the corresponding effect on our results.

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