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Light cold dark matter from non-thermal decay

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Our investigation focuses on determining the mass range and free-streaming length scale of dark matter resulting from heavy objects' non-thermal decay. These objects may be dominant or sub-dominant at the time of decay. Our findings indicate that the resulting dark matter can be exceptionally light, possibly below the keV scale, and still comply with the Lyman-α constraints on free-streaming length. The possible scenario is the axion dark matter from subdominant saxion decay and dark matter from subdominant Q-ball. We present two specific instances of this type of light cold dark matter.

Secondary category for the parallel session (optional)

Astroparticle Physics

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