

Indirect detection of minimal dark matter quintuplet

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In the wake of the recent computation of bound state formation cross-section for minimal dark matter quintuplet that introduces a new signal for indirect detection, we go through 15-year Fermi-LAT data looking for this new line. We examine Fermi-LAT data from the galactic center to assess its capability to detect or rule out a potential line arising from bound-state formation. Our findings reveal that the Fermi-LAT data effectively rules out the MDM 5plet. Moreover, we study the prospects of future Cherenkov Telescope Array for the detection of the annihilation line. We find that it must be possible to detect or exclude minimal dark matter quintuplet by $O(100)$ hour observation of particular dwarf spheroidal galaxies.

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