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Diversity in density profiles of SIDM satellite halos

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Self-interacting Dark Matter (SIDM) could have a number of striking observable effects, including modifications to the dark matter density on galactic and sub-galactic scales. Recent studies have revealed both ultra-compact and ultra-diffuse satellite dwarf galaxies within the Milky Way; this degree of diversity seems challenging to explain if the dark matter is collisionless and cold. I will show that tidal stripping of SIDM satellite halos naturally leads to a wider range of halo density profiles, potentially explaining these observations.

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