

Abstract Submitted  
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**Dark Matter Antibaryons from a Supersymmetric Hidden Sector** NIKITA BLINOV, TRIUMF/University of British Columbia, DAVID MORRISSEY, TRIUMF, KRIS SIGURDSON, University of British Columbia, SEAN TULIN, University of Michigan — The cosmological origin of dark matter and the baryon asymmetry of the universe can be explained through a unified mechanism called hylogenesis where baryon and antibaryon number are sequestered into a visible and a GeV-scale hidden sector. The universe remains baryon symmetric and the hidden antibaryons are the dark matter. We study the cosmology and phenomenology of this scenario in a supersymmetric theory in order to stabilize the electroweak and GeV hidden sector mass scales. This class of models contains a novel direct detection signature where a dark matter particle can scatter inelastically off a nucleon, destroying it and producing a meson and a dark matter antiparticle. This induced nucleon decay can be searched for in present and future nucleon decay experiments.

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