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Search For Dark Matter Satellites Using the Fermi LAT ELLIOTT BLOOM, ALEX DRLICA-WAGNER, LOUIS STIRGARI, PING WANG, KIPAC-SLAC, Stanford University, FERMI LAT COLLABORATION[1] — Numerical simulations based on the ΛCDM model of cosmology predict a large number of as yet unobserved Galactic dark matter satellites. We report the results of a Large Area Telescope (LAT) search for these satellites via the γ-ray emission expected from the annihilation of weakly interacting massive particle (WIMP) dark matter. Some dark matter satellites are expected to have hard γ-ray spectra, finite angular extents, and a lack of counterparts at other wavelengths. We sought to identify LAT sources with these characteristics, focusing on γ-ray spectra consistent with WIMP annihilation through the $b\bar{b}$ channel. We found no viable dark matter satellite candidates using one year of data, and we present a framework for interpreting this result in the context of numerical simulations to constrain the velocity-averaged annihilation cross section for a conventional 100 GeV WIMP annihilating through the $b\bar{b}$ channel.

[1]Should read: Representing the Fermi LAT Collaboration

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