

Abstract Submitted  
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**Preliminary Results for Fermi-LAT Milky Way High Energy Gamma Line Limits<sup>1</sup>** YVONNE EDMONDS, ELLIOTT BLOOM, KIPAC-SLAC, Stanford University, REPRESENTING THE FERMI-LAT COLLABORATION — The FGST Large Array Telescope (Fermi-LAT) Collaboration Dark Matter and New Physics Working group has been developing approaches for the indirect astrophysical detection of dark matter by its annihilation or decay products. Our work is motivated by the hypothesis that a significant component of dark matter is Weakly Interacting Massive Particles (WIMPs). The annihilation of two WIMPs or WIMP decay usually results in the production of many  $\gamma$  rays that if present, can be well measured in the LAT. There is also the possibility to observe  $\gamma$  lines from annihilation or decay into  $\gamma\gamma$  and/or  $\gamma Z$  final states. Detection of these high energy  $\gamma$  lines would give convincing evidence for the existence of WIMPs and a measurement of the WIMP mass. We present preliminary work that will ultimately lead to 1-year upper limits on  $\gamma$  lines. The 1-year analysis will be a “blind” analysis developed on the first two months of Fermi-LAT data and Monte Carlos simulations. Limits will be given independent of the WIMP and dark matter structure models.

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