

Abstract Submitted  
for the APR10 Meeting of  
The American Physical Society

**Using anisotropy to identify a dark matter signal in diffuse gamma-ray emission with Fermi** JENNIFER SIEGAL-GASKINS, CCAPP, Ohio State University, VASILIKI PAVLIDOU, BRANDON HENSLEY, Caltech — Dark matter annihilation in Galactic substructure will produce diffuse gamma-ray emission of remarkably constant intensity across the sky, making it difficult to disentangle this Galactic dark matter signal from the extragalactic gamma-ray background. Recent studies have considered the angular power spectrum of the diffuse emission from various extragalactic source classes and from Galactic dark matter. I'll discuss these results and show how the energy dependence of anisotropies in the total measured diffuse emission could be used to confidently identify a signal from dark matter in Fermi data. Finally, I'll present new results demonstrating how anisotropy analysis could extend the capabilities of current indirect dark matter searches.

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Date submitted: 23 Oct 2009

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