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Hunting for Point Sources in the Extragalactic Gamma-Ray Sky

SIDDHARTH MISHRA SHARMA, MARIANGELA LISANTI, Princeton University, LINA NECIB, BENJAMIN SAFDI, MIT — In this talk, I will present an analysis of the extragalactic gamma-ray background (EGB) using data from the Fermi Large Area Telescope. The method takes advantage of photon-count statistics to determine the properties of resolved and unresolved gamma-ray sources that contribute to the EGB. I will present the source-count functions, as a function of energy, from 1.89 GeV to 2 TeV, as well as the energy spectra of the different contributing source components, and will discuss how the results are affected by a variety of systematic uncertainties. These results allow us to determine the fraction of point sources, predominantly AGN (blazars), that contribute to the unresolved portion of the EGB. I will also comment on the consequences of these results for future TeV observatories such as the Cherenkov Telescope Array.

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