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The First Fermi LAT Catalog of Supernova Remnants

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The Fermi Gamma-ray Space Telescope has shed new light on many types of Galactic objects, including Supernova Remnants (SNRs). With over 15 SNRs identified to date and over 40 candidates in the 2nd Fermi Gamma-ray LAT (2FGL) Catalog, we are beginning to have sufficient numbers to perform GeV SNR population studies and explore their connection to TeV emission. Moreover, with the wealth of multi-wavelength data available, we can now characterize the GeV emission in all regions containing known SNRs in a uniform and consistent manner. This permits the first systematic study of SNRs including GeV data, allowing us to classify SNRs and to separate effects of evolution and environment. In combination with multi-wavelength data, we can constrain emission models of the underlying particle populations, allowing us to quantify SNRs' aggregate contribution to Galactic cosmic rays in a statistically significant manner. We will present preliminary results of this first Fermi LAT catalog of SNRs.

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