

The Monster Next Door Fermi-LAT observations of supernova remnant N132D in the Large Magellanic Cloud

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Supernova remnant (SNR) N132D, located in the Large Magellanic Cloud, represents a unique opportunity for the study of gamma-ray emission from shock-accelerated cosmic rays (CRs) in another galaxy since it stands as the first and only extra-galactic SNR detected in gamma-rays. N132D is one of the brightest SNRs in the local Universe in the X-ray, infrared and radio bands, and it has also been detected in TeV energy gamma-rays. N132D's apparent interaction with a giant molecular cloud strongly favors the scenario where the gamma-ray emission results from CR hadrons interacting with dense ambient media. We report on the detection of N132D with the Fermi-LAT and characterize the emission in the MeV-GeV band. Additionally, we establish an upper-limit on the non-thermal contribution to the X-ray spectrum obtained using Chandra observations. Our results allow us build a very complete picture of the properties of the system and its progenitor, ultimately helping us better understand CR acceleration in SNRs.

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