

The Fermi-LAT and H.E.S.S. views of the supernova remnant W49B

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The supernova remnant (SNR) W49B is a mixed-morphology remnant interacting with molecular clouds (MC) which originated in a Type Ib/Ic supernova explosion that occurred between one to four thousand years ago. It is one of the brightest SNRs in our Galaxy as seen in radio and X-rays. Gamma-ray observations of SNR/MC are a powerful tool to constrain the origin of Galactic cosmic rays, as they can probe the acceleration of hadrons through their interaction with the surrounding medium and subsequent emission of high-energy photons. W49B has been detected in gamma-rays at high energies (0.1-100 GeV) and very high energies (> 100 GeV) with the Fermi-LAT and the H.E.S.S. Cherenkov telescopes, respectively. The latest results obtained on W49B with these instruments will be presented. In particular, we will report on the detection of a spectral break at low energies with the Fermi-LAT, similar to that previously found in other SNRs and interpreted as the signature of gamma-ray emission produced through neutral-pion decay. The implications of these results on the particle population and the physical processes leading to the observed gamma-ray emission in W49B will be discussed.

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Further details will be available in an upcoming publication by the H.E.S.S. and Fermi-LAT Collaborations.

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