

# Gamma Ray Diffuse Emission from the Galactic Plane with HAWC Data

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The Galactic gamma-ray diffuse emission (GDE) is the extended radiation from the Galactic plane produced by the interaction of background cosmic rays (CRs) with ambient gas and radiation fields. Studying this radiation helps us to understand particle transport and distribution in the Galaxy. The HAWC (High Altitude Water-Cherenkov) observatory is an instrument that detects CRs and gamma-rays from 300 GeV to more than 100 TeV by observing the Cherenkov light produced by the air-shower particles into the water of the detector. We will present the analysis of HAWC data from the Galactic plane to measure the spectrum and the angular distribution of the diffuse emission from the Galactic plane. This measured GDE includes the emission induced by the CR sea but also an unavoidable contribution from unresolved gamma-ray sources and thus our results will provide upper limits to the GDE. We will use these HAWC measurements to constrain particle transport properties in different regions of the Galactic plane, such as the region close to the Galactic center, comparing them to the predictions of transport models implemented with the DRAGON code.

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