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Measurement of diffuse gamma-ray emission based on source-deduction method at Galactic plane

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The diffuse Galactic gamma-ray emission, mainly produced via interactions between cosmic rays and the interstellar medium and/or radiation field, is a crucial probe of the distribution, propagation, and interaction of cosmic rays in the Milky Way. Using the source deduction method and the latest data from WCDA and KM2A, we have preliminarily measured this emission and present the energy spectra of diffuse emission in the Inner Galaxy region (15°< l <125°, |b| < 5°) and the Outer Galaxy region (125°< l < 235°, |b| < 5°). Additionally, we found that the spatial distribution of the diffuse emission deviates from the Planck Dust map, suggesting distinct astrophysical origins. These findings offer valuable insights into the properties of diffuse gamma-ray emissions and highlight the need for refined methodologies to better understand the underlying astrophysical processes.

Collaboration you are representing

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Authors: ZHANG, Rui (Purple Mountain Observatory, Chinese Academy of Sciences); Dr ZHAO, Shiping (PMO); Prof. YUAN, Qiang (PMO); Prof. ZHANG, Yi (PMO)

Presenter: ZHANG, Rui (Purple Mountain Observatory, Chinese Academy of Sciences)

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