

## 利用费米数据限制矮星对宇宙线的贡献

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Red dwarfs have been suggested to be among the possible Galactic cosmic ray sources and emitting  $\gamma$ -rays upto the TeV regime. As an effort to search for the GeV  $\gamma$ -ray counterparts of the suggested TeV emission from eight red dwarfs, we analyse the 0.2-500 GeV  $\gamma$ -ray emission of the regions covering them exploiting the  $\sim 13.6$  yr Pass 8 data of the Fermi Large Area Telescope. A GeV  $\gamma$ -ray emission excess with significance of  $3.8\sigma$  is detected in the direction of the red dwarf V962 Tau. This emission contains V962 Tau in  $1\sigma$  error radius and is independent of the catalog source. However, the stellar flare scenario can hardly explain the total energy and lightcurve derived from the  $\gamma$ -ray emission in view of the spectral analysis. We also analyse the lightcurves in the positions of the eight red dwarfs and no time bin with significance  $>5\sigma$  is found. Therefore, no significant emission from the red dwarfs could be concluded to be detected by Fermi -LAT. Contribution of red dwarfs to cosmic rays is also discussed.

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