

Search for gamma-ray lines in the Galaxy with DAMPE

Friday 16 July 2021 19:18 (12 minutes)

DARK Matter Particle Explorer (DAMPE) is a high energy cosmic-ray and gamma-ray observatory with an excellent energy resolution, and therefore has an advantage in searching for gamma-ray line structures. Based on the 5-yr DAMPE observation, we construct a dedicated data set for line search which balances the energy resolution and acceptance. We also make use of the photons converted in the BGO calorimeter. We use the summed unbinned likelihood with sliding windows technique and calculate the 95% confidence limits of the velocity-averaged cross section for $\chi\chi \rightarrow \gamma\gamma$ and the decay lifetime for $\chi \rightarrow \gamma\nu$.

Keywords

Collaboration

DAMPE

other Collaboration

Subcategory

Experimental Results

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Session Classification: Discussion

Track Classification: Scientific Field: GAD | Gamma Ray Direct