Contribution ID: **305** Type: **not specified**

Constraining Unresolved Point Source Contributions to the GeV Excess with Probabilistic Catalogues

Tuesday 4 August 2015 16:48 (18 minutes)

Several groups have identified a highly significant and spatially extended excess of GeV gamma-rays in the Inner Galaxy using data from the Fermi LAT. While this signal's properties are consistent with those expected from dark matter annihilation, another interpretation is that it is the emission from a population of unresolved millisecond pulsars. We implement a Bayesian method for producing probabilistic point source catalogues from the Fermi LAT data to test this interpretation. By using a distribution of catalogues that is consistent with the data, we constrain the luminosity function of any unresolved point sources contributing to the GeV excess.

Oral or Poster Presentation

Oral

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Session Classification: AstroParticle, Cosmology, Dark Matter Searches, and CMB

Track Classification: Cosmology and Dark Matter Experiment