

Statistics of the subhalo population in the Milky Way for the detection of dark matter point sources

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It is known that cold dark matter form structures on scales much smaller than the size of typical galaxies. This clustering translates into a very large population of subhalos in the Milky Way. Analyzing Fermi-LAT data and/or using numerical simulations, several studies have investigated the possibility that among the 1525 unassociated point sources identified by the collaboration (4FGL catalog), some of them be DM subhalos. I present a new statistical analysis for the detectability of DM clumps as point sources within the framework of a semi-analytical model to describe the subhalo population. This approach not only allows to consistently and analytically compute the detection probability of point subhalos but also gives information on the most visible ones (i.e. their position, mass and concentration) and can be used to make predictions for the next generation of telescopes (e.g. CTA).

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