

# Generic DM Models Confronting GC Gamma-ray Excess

*Monday 29 September 2014 17:30 (20 minutes)*

Recently, Daylan et al. re-analyzed data from the Fermi-LAT and found excess flux of Gamma-rays from the direction of the Galactic Center. They concluded that the  $\sim 3$  GeV Gamma-ray signal is statistically significant and appears to originate from dark matter particles annihilating rather than standard astrophysical sources (T. Daylan, D. P. Finkbeiner, D. Hooper, T. Linden, S. K. N. Portillo, N. L. Rodd and T. R. Slatyer, arXiv:1402.6703 [astro-ph.HE]).

Inspired by the excess of Gamma-rays from the Galactic Center, we confront a series of simplified dark matter models with experimental data. Assuming a single dark matter particle coupled to standard matter via a spin-0 mediator, we compare Majorana fermion, real scalar and real vector dark matter candidates. We consider dark matter annihilation into various fermionic final states contributing to the observed differential Gamma-ray flux.

Using Bayesian inference we confine the mass and couplings strengths of the dark matter and mediator particle. Our results show that, if the Gamma-ray excess is due to dark matter the above parameters are well constrained by the measurements including Gamma-ray, relic density and direct detection

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**Session Classification:** Posters Session