

Indirect searches of dark matter via polynomial spectral features

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I will discuss a model-independent approach to calculate the spectra arising from dark matter annihilations or decays into intermediary particles with arbitrary spin, which subsequently produce neutrinos or photons via two-body decays. I illustrate this with two examples. First, with the neutrino spectra arising from dark matter annihilations into the massive Standard Model gauge bosons. Second, with the gamma-ray and neutrino spectra generated by dark matter annihilations into hypothetical massive spin-2 particles. Then, I will apply these concepts to the 750 GeV diphoton excess observed at the LHC if interpreted as a spin-0 or spin-2 particle coupled to dark matter. I also show limits on the dark matter annihilation cross section into this resonance from the non-observation of the associated gamma-ray spectral features by the H.E.S.S. telescope.

Summary

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