

Gamma-ray Blazars above 100 MeV: density, evolution and origin of the Extragalactic Gamma-ray Background

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The mystery of the extragalactic gamma-ray background (EGB) has been investigated since its first detection. To unveil its origin and composition, it is necessary to resolve the different gamma-ray emitting populations. Relying on 8 years of Fermi-Large Area Telescope data, we obtained the most sensitive source count distribution of blazars >100 MeV to date. This allowed us to derive the contribution of blazars to the EGB, highlighting that this population cannot reproduce the entire EGB and that, indeed, another source class is required to explain the residual emission. For the first time, we were also able to differentiate between possible evolutionary paths of this elusive source class, and derive that a density evolution is preferred. In this talk, I will present the latest results of our analysis in light of blazars' evolutionary models and discuss future prospects for the luminosity function study of gamma-ray blazars.

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