

A WISE view of the gamma-ray sky

Using data from the WISE all-sky survey we discovered that the non-thermal infrared emission of blazars, the largest known population of extragalactic gamma-ray sources, has peculiar spectral properties. Here I will review all results achieved on the well known “infrared-gamma-ray connection” based on the latest releases available for both the WISE and the Fermi source catalogs. I will show an updated analysis of the tight correlation between the mid-infrared colors and the gamma-ray spectral index for all gamma-ray blazars and discuss how this connection links both emitted powers and spectral shapes of particles accelerated in jets arising from blazars over ten decades in energy. I will also briefly present a comparison between the infrared-gamma-ray connection and that occurring at radio frequencies. Finally I will discuss on all developments performed in the last decade to use the infrared-gamma-ray connection to discover hundreds of new blazars within the sample of unidentified gamma-ray sources.

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