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Correlation between X-rays and TeV gamma-rays in blazars

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The spectral energy distribution (SED) of blazars is described by two radiative components, which are commonly modeled within the standard one-zone synchrotron self-Compton (SSC) leptonic framework. In this model, it is expected a strong correlation between energy band fluxes of the SED components, such as between soft X-ray and TeV gamma-ray fluxes. The correlations previously reported for some sources are often in small periods of time and are described by a broad variety of functions, from linear to almost cubic correlations. Even for the same source, several types of correlations have been reported. To know if there is a unique correlation behavior per source or in general for all sources, a long period of observation is required for several sources. In this work, we present the long-term soft X-ray vs TeV gamma-ray correlation of 4 HBL blazars at z<0.1 and try to find common behaviors between them. We acknowledge the support from DGAPA PAPIIT IG101320.

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