

Study of periodicity in Blazar light curves observed by Fermi LAT

Long term periodicity in gamma-ray Blazar light curves could be linked to the innermost zone of the complex structure of AGN, like possible presence of binary system of supermassive black holes, or it could shed light on the origin of gamma-rays emission.

The work analyses around 1500 sources, whose 12 years light curves come from the Fermi LAT Repository (<https://fermi.gsfc.nasa.gov/ssc/data/access/lat/LightCurveRepository/>), making use of Lomb Scargle periodogram and wavelet weighted Z transform.

All the available possibilities for the light curves in the Repository, such as different temporal samplings and the use of photon flux and energy flux, are taken into account in order to ensure more reliable results.

We found out high significance periodicity in less than 1% of the sources considered, and in few other sources hints of possible periodicity.

Our results are compliant with the findings of recent literature focused on searches of periodic modulation in AGNs.

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Session Classification: Contributed posters