Contribution ID: **356** Type: **Poster**

Search for transient sources on monthly time scale.

Friday, 16 April 2021 18:20 (7 minutes)

Gamma-ray catalogs produced with data of the Large Area Telescope (LAT) on board the Fermi Gamma-ray Space Telescope typically integrate years of exposure. Since Active Galactic Nuclei (AGNs) are characterized by strong and fast variability, their emission is diluted by long-time data integration. Transient sources can be more easily detected over short time scales. In order to search for these transient sources we have analyzed the first 10 years of data (as for the 4FGL - DR2 Catalog) collected by the LAT integrating over 1-month time intervals. The analysis was performed between 0.1 and 300 GeV using the Pass-8 event-level selection. In the analysis we considered only photons with $|b| > 10^{\circ}$ to exclude the Galactic plane and therefore to avoid confusion with low latitude diffuse emission. We have also excluded all sources closer than 0.8 deg from any previous Fermi-LAT catalog source. We have analyzed 120 months and also performed a 15-day shift of each month in order to not lose any flare at the edges of each time bin. The list of those transient sources will be reported in the 1FLT catalog (the first Fermi-LAT transient source catalog).
Starting from this work, we have constructed a pipeline dedicated to the routine search of the transient sources on monthly time scale, complementary to the routine search on shorter time scales (day and week) done by the Fermi-LAT Flare Advocate activity and Fermi All-sky Variability Analysis (FAVA).

Presenter: MEREU, Isabella

Session Classification: Dark Matter/CR/Catalogs-3

Track Classification: Catalogs