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The unique role of Fermi-LAT in GRB science

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Since their discovery over 50 years ago, Gamma-Ray Bursts (GRBs) have mainly been observed up to a few MeV. In recent years, several detections have been made in the very high-energy domain by ground-based Cherenkov Telescopes, providing new input and raising new questions regarding the emission mechanisms of these powerful events. The Fermi-LAT, spanning the energy range from tens of MeV to several hundreds GeV, carries unique capabilites to bridge these two energy ranges.

The LAT 10-year catalog (2FLGC) was completed in 2019, comprising a systematic study of 186 detections made from launch until August 2018. In this talk we present this work, revealing the characteristics of the GRB population at high energy with unprecedented sensitivity, and cover aspects such as temporal properties, energetics and spectral index of the high-energy emission. Our results confirm Fermi-LAT being a key instrument to understand GRB physics, and underscore the importance of both present and future observations in this energy range.

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