

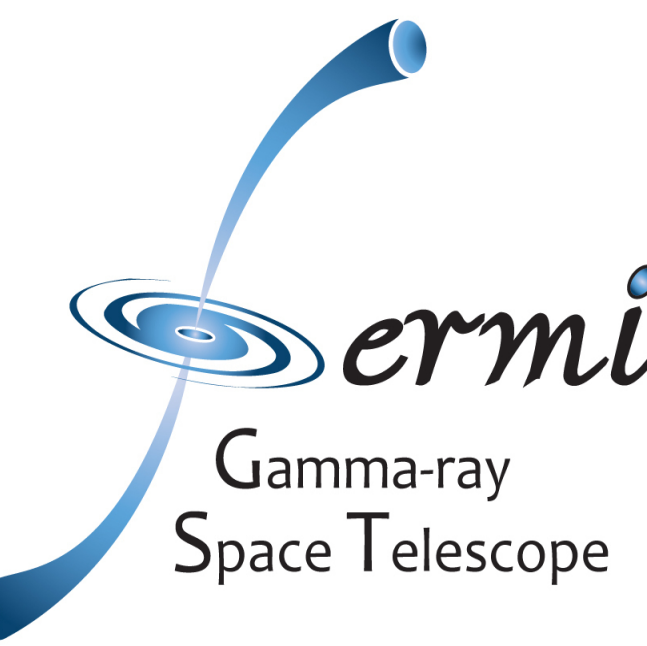


Hunting the gamma-ray emission from Fast Radio Burst with Fermi-LAT

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Executive Summary

Motivation

Discovered just over a decade ago, fast radio bursts (FRBs) are one of the newest astrophysical enigmas. Last year, for the first time, an FRB-like event was associated with a Soft Gamma Repeaters (SGR 1935+2154) and, in particular, to a Galactic magnetar giant flare (MGF). The recent detection of high energy emission, at GeV energies, from a magnetar giant flare in the Sculptor galaxy ($z=0.000811$) motivated the search for gamma-ray counterparts to the known FRBs.

Method

Thanks to:

- over 12 years of data collected by the Fermi Large Area Telescope (LAT),
- more than 1000 published FRBs,

we perform the largest and deepest systematic search for gamma-ray emission from over 1000 repeating and non-repeating bursts.

Outlook

We present here the preliminary results on the search for high-energy emission from the periodic FRB 180916 ($z=0.0337$) with Fermi-LAT

Our results provide crucial information on constraining the origin of FRBs and modelling their emission mechanisms.