Executive summary
Search of Gamma Ray Burst detected by GBM alike to GRB170817A

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Since 2017 with the detection from LIGO/VIRGO of a Gravitational Wave (GW) signal from a neutron star merger followed by a gamma-ray burst (GRB 170817A) a new era in the multi-messenger astronomy started. This burst was reported by the Fermi-GBM instrument which detects photons with energies between 8keV - 40 MeV. With a large Field of View (FOV) Fermi-GBM detects ~ 235 bursts per year and has significantly increased the study of GRBs.
Because of the importance of GRB 170817A several works have searched for bursts with similar temporal and spectral properties. In this work we continue with this search in particular with GBM data from the years 2018 to 2020 detected in the northern hemisphere.
From all the GRBs reported by GBM we selected the ones with a T90 < 5 s. This cut gave 124 bursts from which 55 were detected in the northern hemisphere.
Afterwards we followed the manual procedure presented in von Kienlin, A. et al (2019) that consisted in an inspection of the Light Curves (LCs) followed by a spectral fitting. First the LCs are produced in three different energy bands: 8-50 keV, 50-300 keV and 300-1000 keV. A notorious change is the LC morphology is observed. Two different episodes appear, one is a luminous peak at early times of the bursts and that highlights in the energy band of 50-300 keV. This peak is followed by a tail that is observable mainly in the energy band of 8-50 keV. This inspection method gave us a subsample of 13 GRBs.
Finally after identifying the two episodes we performed the spectral fitting with different photon models. The initial spike is best described by a Comptonized function and the tail is described with a Black Body function.
We found that two bursts can be characterized as similar to GRB 170817A. These bursts are GRB 191017C and GRB 200626A. This search contributes to the prospect of detection of short GRBs as counterparts of GW events by observatories in the northern hemisphere, in particular those with a high Duty Cycle of activity and high FOV.