

# Upper limits on VHE emission from GRBs

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The MAGIC telescopes has developed a dedicated observational strategy to repoint rapidly towards gamma-ray bursts (GRB). In this contribution we present the information extracted from the large sample of the GRBs observed but not detected by MAGIC from 2013 to 2019 aiming to shed light on the reasons behind those non-detections. The same strategy led to the successful detection of two GRBs at very high energies (VHE,  $E > \sim 100$  GeV).

We describe the details of the MAGIC GRB observational procedure and the general properties for each observed GRB. The lack of detection can be attributed either to unfavourable conditions or GRB intrinsic properties, such as the magnetic field's energy density, the bulk Lorentz factor, or the emitting region's size.

For the presented sample of GRBs, we show the methods used to obtain flux upper limits in the VHE range, and propose physical implications of the non-detection of VHE emission.

These results constitute an essential reference point to study the broadband emission of GRBs, and for the Cherenkov telescope community to organize future follow-ups of GRBs at VHE energies.

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## Collaboration

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## other Collaboration

## Subcategory

Experimental Results

**Primary authors:** BERTI, Alessio (INFN); BOSNJAK, Zeljka (FER-University of Zagreb); DONINI, Alice; FUKAMI, Satoshi (ICRR); GREEN, Jarred (INAF-OAR); FRANCESCO, Longo (University of Trieste and INFN Trieste); MICELI, Davide (University of Udine and INFN Trieste); Dr MORETTI, Elena; NAVA, Lara; NODA, Koji (Institute for Cosmic Ray Research, The University of Tokyo)

**Presenter:** FRANCESCO, Longo (University of Trieste and INFN Trieste)

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