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Prospects for Gamma-Ray Bursts detection by the Cherenkov Telescope Array

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The first Gamma-Ray Burst catalog presented by the Fermi-LAT collaboration includes 28 GRBs, detected above 100 MeV over the first three years since the launch of the Fermi mission. However, more than 100 GRBs are expected to be found over a period of six years of data collection thanks to a new detection algorithm and to the development of a new LAT event reconstruction, the so-called "Pass 8". Our aim is to provide revised prospects for GRB alerts in the CTA era in light of these new LAT discoveries.

We focus initially on the possibility of GRB detection with the Large Size Telescopes (LSTs). Moreover, we investigate the contribution of the Middle Size Telescopes (MSTs), which are crucial for the search of larger areas on short post trigger timescales. The study of different spectral components in the prompt and afterglow phase, and the limits on the Extragalactic background light are highlighted. Different strategies to repoint part of - or the entire array - are studied in detail.

Collaboration

CTA

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