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Prospects for the detection and spectral characterization of BLLacs with the CTA extragalactic survey

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The Cherenkov Telescope Array (CTA) is the next-generation ground-based observatory for gamma-ray astronomy, covering a very broad energy range from 20 GeV to beyond 100 TeV. In this work, we are probing the potential of the CTA observatory, through its planned extragalactic survey, in detecting BL Lac sources. The population of these AGNs is being simulated according to a luminosity function tuned in the GeV energy range to the Fermi-LAT data and extrapolated to the TeV region assuming different spectral shapes at the source. We also account for the absorption of the VHE gamma-ray flux in the extragalactic medium due to the interaction with the Extragalactic Background Light (EBL). Both northern and southern sites are included in the study with telescope effects consistent with the instrument response functions (IRFs) of the final array configurations and the telescope inclination. A total of 1000 h of exposure time is simulated in order to scan a region covering 25% of the sky using a celestial grid of equally spaced points.

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