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Modelling very high energy GRB afterglow emission

Monday 12 December 2022 14:00 (1 hour)

Detection of delayed sub-TeV photons from Gamma-Ray Bursts (GRBs) by MAGIC and HESS has proved the promising future of GRB afterglow studies with the Cherenkov Telescope Array, the next-generation ground-based gamma-ray astronomy observatory. With the unprecedented sensitivity of CTA, afterglow detection rates are expected to increase dramatically in the coming decade. We embark on exploring the multi-dimensional afterglow parameter space to see the detectability of sub-TeV photons by CTA. Sub-TeV emission is always due to the self-Compton process. We find that jets with high kinetic energy decelerating into a dense ambient medium are better candidates for CTA. We apply our results in the context of short-duration GRBs and counterparts to Neutron Star mergers from the local universe.

Session

Astroparticle Physics and Cosmology

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