

Downward Terrestrial Gamma-ray Flashes at the Pierre Auger Observatory?



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What is this contribution about?

Peculiar events, characterized by long-lasting signals and footprints much larger than those produced by the highest energy cosmic rays, were detected by the surface detector of the Auger Observatory.

Why is it relevant/interesting?

They could be related to downward TGFs. Understanding these events can give extra-information about atmospheric electricity phenomena.

What has been done?

Most events show a puzzling lack of signals in the central part of the footprint. We performed studies to verify that it is an artifact arising due to the recording system, optimized for the detection of air showers.

What is the result?

We found these events show a longer and more complex time and space evolution than air showers. We need a dedicated trigger to improve the detection, increase the statistics of these events and better verify the link with TGFs.

