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## Significance for signal changes in $\gamma$ -ray astronomy

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We describe a straightforward modification of frequently invoked methods for the determination of the statistical significance of a  $\gamma$ -ray signal observed in a counting process.

A simple criterion is proposed to decide whether a set of measurements of the numbers of photons registered in the source and background regions is consistent with the assumption of a constant source activity.

This method is particularly suitable for immediate evaluation of the stability of the observed  $\gamma$ -ray signal.

It is independent of the exposure estimates, reducing thus the impact of systematic inaccuracies, and properly accounts for the fluctuations in the number of detected photons.

The usefulness of the method is demonstrated on several examples.

We discuss intensity changes for  $\gamma$ -ray emitters detected at very high energies by the current  $\gamma$ -ray telescopes (e.g. 1ES 0229+200, 1ES 1959+650 and PG 1553+113).

Some of the measurements are quantified to be exceptional with large statistical significances.

### Collaboration

– not specified –

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**Primary authors:** NOSKOVA, Jana (Czech Technical University, Prague); STEFANIK, Stanislav (Institute of Particle and Nuclear Physics, Charles University in Prague); NOSEK, dalibor (Charles University)

**Presenter:** STEFANIK, Stanislav (Institute of Particle and Nuclear Physics, Charles University in Prague)

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