

# ON THE APPLICATION OF DIFFERENCES IN THE INTRINSIC FLUCTUATIONS OF CHERENKOV LIGHT IMAGES FOR REJECTION OF THE COSMIC RAY BACKGROUND

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The sensitivity of Cherenkov telescopes critically depends on the rejection of cosmic ray background events. We have exploited a new method which improves the traditional background suppression techniques by accounting for the intrinsically larger fluctuations of light intensity in the images of hadronic atmospheric cascades. The  $\chi^2$ -criterion is employed to develop an event identification scheme.

Optimization of the method has been conducted using the database of simulated events for the VERITAS project. The same set has been used to evaluate the efficiency of the suggested technique for both stereoscopic and single telescope observation modes.

We have demonstrated that the application of the new technique yields an additional background rejection efficiency of a factor of  $1.5 \div 2$  and at the same time it retains  $\simeq 70\%$  of the genuine  $\gamma$ -ray initiated events. The discrimination efficiency increases rapidly with the energy of the primary photon.