

GAMMA HADRON SEPARATION USING ČERENKOV PHOTON TIMING STUDIES

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Cosmic rays form the main source of background against which TeV gamma rays have to be detected using the atmospheric Čerenkov technique. Atmospheric Čerenkov arrays which adopt wavefront sampling technique need to develop suitable species sensitive parameters from the measurements at the observation level. The complementary imaging technique employs, by now, well established imaging parameters for this purpose. We have derived several parameters based on Čerenkov photon arrival times which allow us to discriminate between gamma rays and cosmic rays. These are the wavefront curvature, pulse shape parameters and arrival time jitter at the telescopes. A systematic study of these parameters is carried out using detailed simulations and the resulting quality factors are computed for various primary energies and observation levels.