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A STUDY ON THE LATERAL DISTRIBUTION OF CHERENKOV LIGHT IN SIMULATED EXTENSIVE AIR SHOWERS OF COSMIC RAYS

Abstract

It has been shown that lateral distribution of Cherenkov light in extensive air showers can be used for estimation of primary particle type and energy of the cosmic rays. We have studied the distribution of Cherenkov light at 1200 m above sea level, in the extensive air showers generated from gamma rays, protons, helium, oxygen, silicon and iron nuclei by Monte Carlo simulation with CORSIKA. The distributions are fitted to some empirical models. The fit parameters are shown to be dependent on the primary type and energy.