



AUTOMATIC SEGMENTATION OF INFRARED IMAGE BASED ON χ^2 DISTRIBUTION

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ABSTRACT—The accuracy and detecting distance of infrared imaging system is greatly affected by segmentation and recognition algorithms. By analyzing gradient distribution characteristics of infrared images, the gradient histogram of both targets and background can be fitted by χ^2 distribution density function with different degrees of freedom. According to the above statistical characteristics and the least classified probability, an adaptive segmentation algorithm with automatic estimation of gradient histogram threshold is proposed. The algorithm is validated with infrared images and is proved to be effective and practical.

Key Words: Gradient histogram distribution, Image segmentation.