

Biologically Inspired Small Infrared Target Detection Using Local Contrast Mechanisms

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Abstract : In order to obtain higher small target detection accuracy, this paper presents an effective algorithm inspired by the local contrast mechanism. The proposed method can enhance target signal and suppress background clutter simultaneously. In the first stage, an enhanced image is obtained using the proposed Weighted Laplacian of Gaussian. In the second stage, an adaptive threshold is adopted to segment the target. Experimental results on two changing image sequences show that the proposed method can detect the bright and dark targets simultaneously, and is not sensitive to sea-sky line of the infrared image. So it is fit for IR small infrared target detection.

Keywords : small target detection, local contrast, human vision system, Laplacian of Gaussian

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