THE USE OF HILBERT TRANSFORM ON DSNR ANALYSIS OF STEP AND RIDGE EDGE DETECTION (MonPmPO3)

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Abstract :

In this paper, the analytical expressions of Discriminative Signal to Noise Ratio (DSNR) of step−edge and ridge−edge via Hilbert Transform (HT) have been derived. Firstly we revisit those expressions evaluated for step−edge by using Canny's Edge Detector (CED) and Step Expansion Filter (SEF). Although SEF is optimal for step edges in terms of DSNR criterion, it is not optimal with respect to a variety of edge types. The matching filter has to be modified for different edge types. But a local energy measure obtained via HT can detect any kind of edges. The results obtained by HT are compared with the results of SEF and CED.

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