FAST COLOR WAVELET-HAAR-HARTLEY-PROMETHEUS TRANSFORMS FOR IMAGE PROCESSING

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Abstract This paper present a new approach to the Color Fourier Transformation. Color image processing is investigated in this paper using an algebraic approach based on triplet (color) numbers. In the algebraic approach, each image color pixel is considered not as a 3D vector, but as a triplet (color) number. The so-called orthounitary transforms are introduced and used for color image processing. These transforms are similar to a fast orthogonal and unitary transforms. Simulations using the color Wavelet-Haar-Prometheus transforms on color image compression have also been performed.

Keywords: Clifford algebra, color images, color wavelet, edge detection, orthounitary transforms.