



A New Hybrid Order Approach to Morphological Color Image Processing Based on Reduced Order with Adaptive Absolute Reference

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Résumé en anglais	<p>Mathematical morphology can process the binary and grayscale image successfully. This theory cannot be extended to the color image directly. In color space, a vector represents a pixel, so in order to compare vectors, vectoriel orderings must be defined first. This paper addresses the question of the extension of morphological operator to the case of color images. The proposed method used the order by bit mixing to replace the conditional order. Our order is based on a combination of reduced and bit mixing ordering of the underlying data. Additionally it is a total ordering. Since it not only solves the problems of false color generated by the marginal order but also those of multiple extrema generated by reduced order. The performance of the introduced operators is illustrated by means of different applications: color gradients for segmenting, image smoothing (noise suppression) by median filter operator and Laplacian operators. Examples of natural color images and synthetic color images are given. Experimental results show the improvement brought by this new method.</p>
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