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## A Modified 2D Chain Code Algorithm for Object Segmentation and Contour Tracing

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**Abstract:** In this paper, a modified algorithm for object segmentation of binary images is presented, and denoted as 2D modified chain code algorithm. The 2D modified chain code algorithm can be applied to color images after being binarized. The segmented object is used to derive the chain code in the image. The definition of the 2D- modified chain code algorithm is valid for shapes composed of triangular, rectangular, and hexagonal cells. The 2D modified chain code preserves information and allows computing geometric dimension. The results demonstrate that the 2D modified chain code algorithm could extract the coordinates of the shapes at lower computational cost when compared to the classical chain code. Here, a considerable improvement in accuracy (20.1-57.2%) over what is possible with the classical chain code has been achieved at the expense of slight increase in computational cost (10-20%).