Optimizing the Visibility of Squares through Displacement

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In this research, we study a problem of optimizing the visibility of unit squares through their displacement within a bounding container. We consider two optimization criteria: one aims to maximize the total length of the visible perimeter of all squares (MAX-TOTAL), while the other aims to maximize the minimum visible perimeter of a square among all squares (MAX-MIN). For the MAX-TOTAL variation, we prove an optimal displacement of squares inside a rectangular container with side lengths of at most 2. It helps us to establish some bounds for larger rectangular containers. For the MAX-MIN case, we improve upon some existing results by considering different shapes of bounding containers.