
Digital Two-dimensional Bijective Reflection and Associated Rotation

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Abstract

In this paper, a new bijective reflection algorithm in two dimensions is proposed along with an associated rotation. The reflection line is defined by an arbitrary Euclidean point and a straight line passing through this point. The reflection line is digitized and the 2D space is paved by digital perpendicular (to the reflection line) straight lines. For each perpendicular line, integer points are reflected by central symmetry with respect to the reflection line. Two consecutive digital reflections are combined to define a digital bijective rotation about arbitrary center, i.e. bijective digital rigid motion.

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