

Improved algorithm to find isoptic surfaces for three-dimensional objects

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Abstract

In the two-dimensional Euclidean space, for a given curve C , the isoptic curve is the locus of points P where the tangents from P to C meet at a fixed given angle. The following generalization to three dimensions is recently defined in [1]: The isoptic surface of an arbitrary compact domain D is the locus of points P where the measure of the projection of D onto the unit sphere around P is equal to a given fixed value α .

Csima and Szirmai also presented an algorithm [1] to determine isoptic surfaces of convex polyhedra based on analytic computations. In this presentation a new method will be shown to search for isoptic surfaces of three-dimensional shapes. Furthermore, it can be used to determine isoptics of concave objects as well. This algorithm is an improved version of our previous result [2].

Keywords: computer graphics, isoptic curve, isoptic surface

MSC: 68U07

References

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