

Circular Approximation by Trigonometric Bézier Curves

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Abstract : We present a trigonometric scheme to approximate a circular arc with its two end points and two end tangents/unit tangents. A rational cubic trigonometric Bézier curve is constructed whose end control points are defined by the end points of the circular arc. Weight functions and the remaining control points of the cubic trigonometric Bézier curve are estimated by variational approach to reproduce a circular arc. The radius error is calculated and found less than the existing techniques.

Keywords : control points, rational trigonometric Bézier curves, radius error, shape measure, weight functions

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