

## Parametric Polynomial Circle Approximation

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Uniform approximation of a circle arc (or a whole circle) by a parametric polynomial curve is considered. The approximant is obtained in a closed form. It depends on a parameter that should satisfy a particular equation, and it takes only a couple of tangent method steps to compute it. For low degree curves the parameter is provided exactly. The distance between a circle arc and its approximant asymptotically decreases faster than exponentially as a function of polynomial degree. The approximant can be applied for a fast evaluation of trigonometric functions and for a good bivariate parametric polynomial approximation of the sphere.