A new family of non-uniform subdivision scheme with two tension and one shape parameters.

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Abstract

In this paper, we propose a new non-uniform subdivision scheme that includes a tension and shape parameters sequence. Each form parameter of the sequence is assigned at each edge of the initial control polygon. The proposed scheme can produce limiting curves that are more consistent with the original data points and the control polygon. It has also the advantage of generating a wide variety of shapes for the limiting curves. The convergence and smoothness of the proposed scheme are proven by using the asymptotic equivalence concept. Numerical results that illustrate the advantages of the proposed non-uniform scheme are given.

Joint work with: Abdellah Lamnii, Ahmed Zidna.

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