

Report on

Splitting piecewise cubic Bézier curves and the equivalence constants for some norms

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The article investigates the splitting of uniform N -piece cubic Bézier curves into $2N$ -piece curves while maintaining the same degree. The primary contribution is the derivation of equivalence constants for norms defined by control points ($\|\cdot\|_p^{B_{N,3}}$ and $\|\cdot\|_p^{B_{2N,3}}$) on the space $B_{N,3}$. These constants are shown to be independent of the number of pieces N , which is a useful result for trajectory optimization and checking the convergence of curve sequences.

All the proofs seem to be correct. The presentation is clear. A carefully revised version of this paper can be recommended for publication in Quy Nhon University Journal of Science with only minor checks required.

Comments:

- Page 2, line 1: “equivalence relations” → “equivalence constants”.
- Page 2, paragraph 1, line 2: “or curves which given” → “or are defined”.
- Page 2, paragraph 2, line 17: “it need” → “it requires”.
- Page 2, paragraph 2, line 20: “can be use” → “can use”.
- Page 3, paragraph 1, line -9: remove “For the readers can follow along easily,”.
- Page 3, paragraph 2, line -9: “For convenient” → “For convenience”.
- Page 4, paragraph 1: What is B_m in Definition 5?
- Page 4, paragraph 2, line 7: In the proof of Lemma 7, can you explain the first inequality in Case $p \in [1, \infty[$?
- Page 6, paragraph 1: In Case 1 and 2: “ $\sum_{i=3}^3$ ” → “ $\sum_{i=0}^3$ ”.
- Page 6, paragraph 2, line 1: “j3+4” → “j3+3”.