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A class of parametrization method of accumulated average arc length for parametric curves.
(Chinese. English summary) [Zbl 07403999]

Summary: By using the specified method and constraint criteria for local interpolation, and the idea of transferring from part to whole in order to solve the problem efficiently, the general framework of the accumulated average arc length parametrization method was given, and three concrete accumulation average arc length parametrization methods and corresponding numerical algorithms were given under the framework. The objective of the accumulated average arc length parametrization method was to reduce the objective function value of the curve with respect to the smoothness obtained by the traditional method, and make the method have the flexibility to generate the curve satisfying the conditions according to designer’s requirements. Examples show that under the same constraint criterion, the objective function values of global interpolation curves obtained by the method can be less than that corresponding to chord length parametrization and centripetal parametrization.

MSC:
65D17 Computer-aided design (modeling of curves and surfaces)
68U07 Computer science aspects of computer-aided design

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parametrization method; local interpolation; constraint criterion; spline

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