

Semi-structured T-splines

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However, T-splines[1,2] suffer two main disadvantages, i.e., lack of proof of linear independence of the associated blending functions and the global propagation of local refinement algorithm. Analysis-suitable T-splines[3,4] form a practically useful subset of T-splines[1,2]. They maintain the design flexibility of T-splines, while preserving the important analysis-suitable mathematical properties of the NURBS basis. The present talk introduces a new generalization of T-splines, called semi-structured T-splines, which allow the blending functions are not tightly coupled with the T-mesh. We also present a control point insertion algorithm for semi-structured T-splines which never introduces any additional control points. Moreover, the linear independence for the blending functions can be preserved during the local refinement algorithm when we insert non-multiple knots.

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