

U-splines: overcoming the analysis-suitable topological constraint in T-splines

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ABSTRACT

Achieving high fidelity simulation results across a wide spectrum of application areas depends strongly upon the *analysis-suitable* nature of the underlying geometry. Several examples, among many, include shells, contact, boundary layer phenomena, and shape and topology optimization. In these examples, the exact watertight representation of smooth geometry and a properly formulated underlying basis is essential for accurate and robust solution behavior. In this talk, I will discuss our recent efforts to develop a new spline representation, called U-splines, which overcome the topological analysis-suitability constraint of T-splines while providing maximum flexibility for both design and analysis. I will then demonstrate the use of the technology on several challenging problems in structural dynamics.