UNSTRUCTURED SPLINE TECHNOLOGIES

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ABSTRACT

Standard spline basis functions, including B-splines, NURBS, and box-splines, are defined only on structured meshes and must be suitably extended for domains with non-trivial topology. Therefore, easy-to-construct and optimally convergent generalizations of splines to unstructured meshes with extraordinary vertices are vital for applying isogeometric analysis to most industrial problems. Numerous techniques have been proposed to handle extraordinary vertices, including geometrically G^k and parametrically C^k continuous constructions, subdivision surfaces, macro-elements and manifold constructions. This mini-symposium aims to provide a platform for discussing the analysis and extensions of known techniques, as well as for introducing novel unstructured spline constructions.