Polynomial Splines with Arbitrary Smoothness on Plane Triangulations.

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Abstract

Given a triangulation on a polygonal domain. We consider polynomial splines of global smoothness r on a refined triangulation, where each triangle is split into sub patches. Examples are the WangShi split and the Powell-Sabin 6 and 12 splits. We propose a partition of unity simplex spline basis of degree $3r$ and smoothness r on the Clough-Tocher split.

This is joint work with Jean-Louis Merrien and Tomas Sauer.