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Nota di contenuto	Computing Isophotes on Free-Form Surfaces Based on Support Function Approximation -- Swept Volume Parameterization for Isogeometric Analysis -- Numerical Checking of C 1 for Arbitrary Degree Quadrilateral Subdivision Schemes -- The Invariant Functions of the Rational Bi-cubic Bézier Surfaces -- Crazy Cuts: Dissecting Planar Shapes into Two Identical Parts -- Piecewise Rational Manifold Surfaces with Sharp Features -- Deriving Box-Spline Subdivision Schemes -- Geometric Characterizations of Graphs Using Heat Kernel Embeddings

-- Compressive Algorithms—Adaptive Solutions of PDEs and Variational Problems -- Symmetry-Aware Mesh Processing -- Recent Advances in Computational Conformal Geometry -- Finite Curvature Continuous Polar Patchworks -- A New Approach to Point Membership Classification in B-rep Solids -- Probabilistic Modeling and Visualization of the Flexibility in Morphable Models -- Parameterizing Singularities of Positive Integral Index -- Two Step Time Discretization of Willmore Flow -- Surface Triangulation and the Downstream Effects on Flattening -- On Mesh Editing, Manifold Learning, and Diffusion Wavelets -- Gradient Approximation on Uniform Meshes by Finite Differences and Cubic Spline Interpolation -- Metric Methods in Surface Triangulation -- Setback Vertex Blends in Digital Shape Reconstruction -- Learning a Self-organizing Map Model on a Riemannian Manifold -- Surface Quasi-Conformal Mapping by Solving Beltrami Equations.

Sommario/riassunto

This book constitutes the refereed proceedings of the 13th IMA International Conference on the Mathematics of Surfaces held in York, UK in September 2009. The papers in the present volume include seven invited papers, as well as 16 submitted papers. The topics covered include subdivision schemes and their continuity, polar patchworks, compressive algorithms for PDEs, surface invariant functions, swept volume parameterization, Willmore flow, computational conformal geometry, heat kernel embeddings, and self-organizing maps on manifolds, mesh and manifold construction, editing, flattening, morphing and interrogation, dissection of planar shapes, symmetry processing, morphable models, computation of isophotes, point membership classification and vertex blends. Surface types considered encompass polygon meshes as well as parametric and implicit surfaces.
