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Nota di contenuto	Global Solutions of Well-Constrained Transcendental Systems Using Expression Trees and a Single Solution Test -- Surfaces with Rational Chord Length Parameterization -- Support Function of Pythagorean Hodograph Cubics and G 1 Hermite Interpolation -- Piecewise Tri-linear Contouring for Multi-material Volumes -- An Efficient Algorithm for the Sign Condition Problem in the Semi-algebraic Context --

Constraints on Curve Networks Suitable for G 2 Interpolation -- Computing the Distance between Canal Surfaces -- A Subdivision Approach to Planar Semi-algebraic Sets -- Non-manifold Medial Surface Reconstruction from Volumetric Data -- Decomposing Scanned Assembly Meshes Based on Periodicity Recognition and Its Application to Kinematic Simulation Modeling -- Automatic Generation of Riemann Surface Meshes -- G 1 Bézier Surface Generation from Given Boundary Curve Network with T-Junction -- Efficient Point Projection to Freeform Curves and Surfaces -- Construction of Minimal Catmull-Clark's Subdivision Surfaces with Given Boundaries -- Parameterization of Star-Shaped Volumes Using Green's Functions -- Optimal Analysis-Aware Parameterization of Computational Domain in Isogeometric Analysis -- Construction of Subdivision Surfaces by Fourth-Order Geometric Flows with G 1 Boundary Conditions -- Efficient Computation of 3D Clipped Voronoi Diagram -- Selecting Knots Locally for Curve Interpolation with Quadratic Precision -- Eigenmodes of Surface Energies for Shape Analysis.

Sommario/riassunto

This volume contains the papers presented at 6th Conference on Geometric Modeling and Processing (GMP 2010) held in Castro Urdiales, Spain during June16–18,2010. GeometricModelingandProcessingisabiannualinternational conference series on geometric modeling, simulation and computing. Previously, GMPhasbeenheldinHongKong(2000),Saitama,Japan(2002),Beijing,China (2004), Pittsburgh, USA (2006) and Hangzhou, China (2008). GMP 2010 received a total of 30 submissions that were reviewed by three to four Program Committee members on average. While the number of subm-sions dropped signi?cantly from previous years, the quality did not and was still quite high overall. Based on the reviews received, the committee decided to - cept 20 papers for inclusion in the proceedings. Additionally, extended versions of selected papers were considered for a special issue of Computer-Aided - sign (CAD) and Computer-Aided Geometric Design (CAGD). The paper topics spanned a wide variety and include: – Solutions of transcendental equations – Volume parameterization – Smooth curves and surfaces – Isogeometric analysis – Implicit surfaces – Computational geometry Many people helped make this conference happen and we are grateful for their help. We would especially like to thank the Conference Chair, all of the authors who submitted papers, the ProgramCommittee members who reviewed the papers and all of the participants at the conference.