

Contents

Invited talks

Miklós Hoffmann , Roland Kunkli Skinning of circles	11
Adolf Karger Parallel manipulators and Borel-Bricard's problem	13
Bernard Mourrain Robust and efficient geometric processing of semi-algebraic curves and surfaces	15
Hartmut Prautzsch 35 Years of Subdivision	17
Hellmuth Stachel A kinematic approach to Kokotsakis meshes.....	19

Contributions

Gert F. Bär Synthesis of Non-Circular Gears	23
Michael Bartoñ , Iddo Hanniel, Gershon Elber, Myung-Soo Kim Precise Hausdorff Distance Computation between Polygonal Meshes .	24
Marek Byrtus A note on PH cubics.....	26
Jorge Caravantes , Laureano Gonzalez-Vega A (quite) closed formula for Brill's equations	27
Andrea Cerri , Patrizio Frosini Advances in multidimensional size theory	28
Zlatko Erjavec Ricci curvature and Ricci flow of three dimensional twisted product homogeneous geometries	30

Mario Fioravanti , Laureano Gonzalez-Vega	
Sectioning the offsets of a ruled, revolution or ringed surface	31
Paul Zsombor-Murray , Anton Gfrerrer	
A Unified Approach to Direct Kinematics of some Reduced Motion Parallel Manipulators	32
Rida T. Farouki, Carlotta Giannelli , Carla Manni, Alessandra Sestini	
Rational rotation-minimizing motion design	33
Giovanna Coral, Laureano Gonzalez-Vega	
Algorithms for hyperbolic and trigonometric curves: implicitization and parameterization	35
Jens Gravesen	
Ridges from support functions	37
Marco Hamann , Gunter Weiss	
Line-Symmetric Motions caused by Quadrics and their Study-Image.	39
Christoph Heinrich , Bernd Simeon, Stefan Boschert	
A Comparison of FEM and Isogeometric Solvers	41
Gilbert Helmbert	
Some Space-filling Fractal Curves	42
Gašper Jaklič , Emil Žagar	
Cubic G^1 interpolatory splines with small strain energy	43
Ema Jurkin	
Circular Quartics in Isotropic Plane Generated by Projectively Linked Pencils of Conics	44
Jieun Lee, Seung-Hyun Yoon, Myung-Soo Kim	
Freeform Surfaces for Shape Control in Character Animation.....	45
Alexej Kolcun	
Decompositions of Structured Meshes	46
Michael Floater, Jiří Kosinka	
On Some Properties of Warren-Wachspress Mappings	48

Marjeta Krajnc	
Interpolation scheme for planar cubic G^2 spline curves	50
Esmeralda Mainar, Juan Manuel Peña	
Optimal stability of bivariate tensor product bases	51
Víctor Fernández Mateos	
The total curvature of curves in Riemannian manifolds as the limit of total curvatures of inscribed geodesic polygons	52
Georg Nawratil	
On the spin surface of RSSR mechanisms with parallel rotary axes ..	53
Martin Peternell	
Rational Two-Parameter Families of Spheres and Rational Offset Surfaces	55
Martin Aigner, Bert Jüttler, Elisabeth Pilgerstorfer	
Swept Volume Parameterization.....	56
Jana Přívratská	
Black and white layer groups and ornaments	57
Laureano Gonzalez-Vega, Gema R. Quintana	
Computing the distance of closest approach between ellipses and ellipsoids.....	59
Maharavo Randrianarivony	
Implicit representation of large tensor product B-splines and NURBS	60
Ulrich Reif, Nicole Lehmann	
The Embedded Weingarten Map – Theory and Applications.....	61
Otto Röschel	
New Overconstrained Multi-Loop-Mechanisms	62
Carla Manni, Francesca Pelosi, Maria Lucia Sampoli	
Generalized B-splines: from shape control to Isogeometric Analysis..	64
Emad Shonoda, Gunter Weiss	
On Ruled Surfaces and Semi-inner product in Minkowski Three-dimension Space.....	66

Hans-Peter Schröcker, Bert Jüttler The Simplest Truly Spatial Motion.....	68
Marija Šimić Power of the Point and the Line with respect to the Circle in the Isotropic Plane	70
Vibeke Skytt, Tor Dokken Surface Self Intersections.....	71
Xinghua Song, Bert Jüttler Modeling and 3D Object Reconstruction by Implicitly Defined Surfaces with Sharp Features	72
Emil Molnár, Jenő Szirmai Classification and visualization of 3-lattices in Sol-geometry	73
Bitá Turesavadkoohi, Raffaele De Amicis Foot wear fit from three-dimensional scans: An accurate reverse engineering system and comparison	74
Ljubica Velimirović, Svetozar Rančić, Milan Zlatanović Rigidity and Flexibility Analysis of a Kind of Surfaces of Revolution and Visualization	76
Miroslav Lávička, Jan Vršek Algebraic analysis of convolutions of curves	77
Matthias J. Weber, Hans-Peter Schröcker Uniqueness Results for Extremal Quadrics.....	78
Paweł Woźny, Stanisław Lewanowicz Multi-degree reduction of triangular Bézier surfaces with boundary constraints, using bivariate dual Bernstein polynomials.....	80
Gašper Jaklič, Jernej Kozak, Marjeta Krajnc, Vito Vitrih, Emil Žagar High order parametric polynomial approximation of conic sections...	81

Posters

Eva Černožorská, Zbyněk Šír
Support function of the Tschirnhausen cubic and its applications 85

Jaromír Dobrý
Image Resampling via Discrete Generalized Medial Axis Transform . . 86

Georgi H. Georgiev
A modified vector cross product and its applications 87

Sonja Gorjanc
Rose Surfaces 88

Maria Dyachkova Trnkova, Jiří Vanžura
Modules over one irreducible algebra 90

List of participants 91

INVITED TALKS