

GMP 2008 Programs

- **Venue**

Course Venue: Room 316, OuYangChunMei Building, Zhejiang University

Conference Venue: Room 501, Center of Mathematical Science, Zhejiang University

See the map in the end of this document.

- **Overview**

	Tuesday April 22		Wednesday April 23	Thursday April 24	Friday April 25
09:00 – 21:00	Registration	08:20 – 08:50	Registration		
		08:50 – 09:00	Opening Session	Registration	Registration
		09:00 – 09:45	Invited Talk 1	Invited Talk 2	Invited Talk 3
		09:50 – 10:50	Session 1	Session 5	Session 9
		10:50 – 11:10	Coffee Break	Coffee Break	Coffee Break
		11:10 – 12:10	Session 2	Session 6	Session 10
13:40 – 15:30	Course 1	12:10 – 13:40	Lunch	Lunch	Lunch
15:30 – 15:40	Q&A	13:40 – 15:00	Session 3	Session 7	City Touring
15:40 – 16:00	Coffee Break	15:00 – 15:20	Coffee Break	Coffee Break	
16:00 – 17:50	Course 2	15:20 – 16:40	Session 4	Session 8	
17:50 – 18:00	Q&A	16:40 – 18:00	Poster Session I	Poster Session II	
18:15 – 20:00	Dinner	18:15 – 20:00	Dinner	Banquet	

- **Detailed program**

Tuesday, 22 April 2008

Course 1

Support Functions and Non-Linear Computational Geometry

Bert Jüttler (*Johannes Kepler University Linz, Austria*)

Franz Aurenhammer (*Graz University of Technology, Austria*)

13:40 – 14:30

Part I

14:30 – 14:40

Short Break

14:40 – 15:30

Part II

15:30 – 15:40

Q&A

15:40 – 16:00

Coffee Break

Course 2

Overview on Delaunay and non-Delaunay longest edge based mesh generation and open problems

Maria-Cecilia Rivara (*University of Chile, Chile*)

16:00 – 16:50

Part I

16:50 – 17:00

Short Break

17:00 – 17:50

Part II

17:50 – 18:00

Q&A

18:15 – 20:00 **Dinner**

Day One **Wednesday, 23 April 2008**

08:50 – 09:00 **Opening Session**

09:00 – 09:45 **Invited talk 1** (Chair: Ron Goldman)

Adapted and directed rotation-minimizing frames on space curves: theory, algorithms, and applications

Rida T. Farouki (*University of California, Davis, USA*)

Session 1 **Curves and surfaces** (Chair: Willem F. Bronsvooort)

09:50 – 10:10 **On interpolation by spline curves with shape parameters**

Miklós Hoffmann (*Károly Eszterházy College, Hungary*)

Imre Juhász (*University of Miskolc, Hungary*)

10:10 – 10:30 **A Revisit to Least Squares Orthogonal Distance Fitting of Parametric Curves and Surfaces**

Yang Liu (*The University of Hong Kong, China*)

Wenping Wang (*The University of Hong Kong, China*)

10:30 – 10:50 **Controlling Torsion Sign**

E.I. Karousos (*National Technical University of Athens, Greece*)

A.I. Ginnis (*National Technical University of Athens, Greece*)

P.D. Kaklis (*National Technical University of Athens, Greece*)

10:50 – 11:10 **Coffee Break**

Session 2 **Simplification and FEM** (Chair: Hiromasa Suzuki)

11:10 – 11:30 **Mesh Simplification with Vertex Color**

Hyun Soo Kim (*Gwangju Institute of Science and Technology, Korea*)

Han Kyun Choi (*Gwangju Institute of Science and Technology, Korea*)

Kwan H. Lee (*Gwangju Institute of Science and Technology, Korea*)

11:30 – 11:50 **A Carving Framework for Topology Simplification of Polygonal Meshes**

Nate Hagbi (*Ben-Gurion University, Israel*)

Jihad El-Sana (*Ben-Gurion University, Israel*)

11:50 – 12:10 **Finite Element Methods for Geometric Modeling and Processing**

Guoliang Xu (*Chinese Academy of Sciences, Beijing, China*)

12:10 – 13:40 **Lunch**

Session 3 **Parameterization** (Chair: Ralph Martin)

13:40 – 14:00 **Slit Map: Conformal Parameterization for Multiply Connected Surfaces**

Xiaotian Yin (*State University of New York at Stony Brook*)

Junfei Dai (*Zhejiang University*)

Shing-Tung Yau (*Harvard University*)

Xianfeng Gu (*State University of New York at Stony Brook*)

- 14:00 – 14:20 **Cutting and fracturing models without remeshing**
 Song Chao (*Zhejiang University, China*)
 Zhang Hongxin (*Zhejiang University, China*)
 Bao Hujun (*Zhejiang University, China*)
- 14:20 – 14:40 **Parameterizing Marching Cubes Isosurfaces with Natural Neighbor Coordinates**
 Gregory M. Nielson (*Arizona State University, AZ, USA*)
 Liyan Zhang (*Nanjing University of Aeronautics and Astronautics, China*)
 Kun Lee (*Handong Global University, South Korea*)
 Adam Huang (*National Taiwan University Hospital, Taiwan*)
- 14:40 – 15:00 **Reconstructing a Mesh from a Point Cloud by Using a Moving Parabolic Approximation**
 Zhouwang Yang (*Seoul National University, Korea*)
 Yeong-Hwa Seo (*Seoul National University, Korea*)
 Tae-Wan Kim (*Seoul National University, Korea*)
- 15:00 – 15:20 **Coffee Break**
- Session 4** **Collision detection** (Chair: Gershon Elber)
- 15:20 – 15:40 **Efficient Collision Detection using a Dual Bounding Volume Hierarchy**
 Jung-Woo Chang (*Seoul National University, Korea*)
 Wenping Wang (*University of Hong Kong, Hong Kong*)
 Myung-Soo Kim (*Seoul National University, Korea*)
- 15:40 – 16:00 **Continuous Collision Detection between two 2D Curved-Edge Polygons under Rational Motions**
 Wenjuan Gong (*Shandong University, China*)
 Changhe Tu (*Shandong University, China*)
- 16:00 – 16:20 **Determining Directional Contact Range of Two Convex Polyhedra**
 Yi-King Choi (*University of Hong Kong, China*)
 Xueqing Li (*Shandong University, China*)
 Fengguang Rong (*Shandong University, China*)
 Wenping Wang (*University of Hong Kong, China*)
 Stephen Cameron (*Oxford University, U.K.*)
- 16:20 – 16:40 **Detection of Planar Regions in Volume Data for Topology Optimization**
 Ulrich Bauer (*FU Berlin, Germany*)
 Konrad Polthier (*FU Berlin, Germany*)
- 16:40 – 17:10 **Short Oral Presentations** (Chair: Franz Aurenhammer)
- Quasi-interpolation for Data Fitting by the Radial Basis Functions**
 Xuli Han (*Central South University, China*)
 Muzhou Hou (*Central South University, China*)
- Convex Surface Interpolation**
 Malik Zawwar Hussain (*University of the Punjab, Lahore-Pakistan*)
 Maria Hussain (*University of the Punjab, Lahore-Pakistan*)
- 3D Mesh Segmentation Using Mean-shifted Curvature**

Xi Zhang (*South China University of Technology, China*)
Guiqing Li (*South China University of Technology, China*)
Yunhui Xiong (*South China University of Technology, China*)
Fenghua He (*Nanchang Land Army College*)

Manifoldization of β -shapes by topology operators

Donguk Kim (*Hanyang University, Korea*)
Changhee Lee (*Hanyang University, Korea*)
Youngsong Cho (*Hanyang University, Korea*)
Deok-Soo Kim (*Hanyang University, Korea*)

Shape Representation and Invariant Description of Protein Tertiary Structure in Applications to Shape Retrieval and Classification

Dong Xu (*Chinese Academy of Sciences, China*)
Hua Li (*Chinese Academy of Sciences, China*)
Tongjun Gu (*Chinese Academy of Sciences, China*)

Progressive Interpolation using Loop Subdivision Surfaces

Fuhua (Frank) Cheng (*University of Kentucky, USA*)
Fengtao Fan (*University of Kentucky, USA*)
Shuhua Lai (*Virginia State University, USA*)
Conglin Huang (*University of Kentucky, USA*)
Jiaxi Wang (*University of Kentucky, USA*)
Junhai Yong (*Tsinghua University, China*)

Geometric Calibration of Projector Imagery on Curved Screen Based-on Subdivision Mesh

Jun Zhang (*Sichuan University, China*)
BangPing Wang (*Sichuan University, China*)
XiaoFeng Li (*Sichuan University, China*)

Narrow-band Based Radial Basis Functions Implicit Surface Reconstruction

Xiaojun Wu (*Shenzhen Graduate School, China*)
Michael Yu Wang (*Chinese University of Hong Kong, China*)
Jia Chen (*Shenzhen Graduate School, China*)

17:10 – 18:00

Poster Session

18:15 – 20:00

Dinner

Day Two

Thursday, 24 April 2008

09:00 – 09:45

Invited talk 2 (Chair: Myung-Soo Kim)

Think globally, act locally: Recent trends in geometry processing

Craig Gotsman (*Technion, Israel*)

Session 5

Freeform Surfaces (Chair: Guoliang Xu)

09:50 – 10:10

Bicubic G^1 interpolation of irregular quad meshes using a 4-split

S. Hahmann (*Grenoble INP*)

GP. Bonneau (*Université Joseph Fourier, INRIA*)

B. Caramiaux (*Université Joseph Fourier, INRIA*)

- 10:10 – 10:30 **Bounding the Distance between a Loop Subdivision Surface and Its Limit Mesh**
 Zhangjin Huang (*Peking University, China*)
 Guoping Wang (*Peking University, China*)
- 10:30 – 10:50 **Geodesic as limit of geodesics on PL-surfaces**
 André Lieutier (*Dassault Systemes, Aix-en-Provence, France*)
 Boris Thibert (*Laboratoire Jean Kuntzmann, Grenoble, France*)
- 10:50 – 11:10 **Coffee Break**
- Session 6** **Deformation and Segmentation** (Chair: Maria-Cecilia Rivara)
- 11:10 – 11:30 **Space-time Curve Analogies for Motion Editing**
 Yuan Wu (*Zhejiang University, China*)
 Hongxin Zhang (*Zhejiang University, China*)
 Chao Song (*Zhejiang University, China*)
 Hujun Bao (*Zhejiang University, China*)
- 11:30 – 11:50 **Mean Value Bézier Maps**
 Torsten Langer (*MPI Informatik, Germany*)
 Alexander Belyaev (*Heriot-Watt University, Scotland*)
 Hans-Peter Seidel (*MPI Informatik, Germany*)
- 11:50 – 12:10 **Meaningful Mesh Segmentation Guided by the 3D Short-Cut Rule**
 Zhi-Quan Cheng (*National University of Defense Technology, China*)
 Bao Li (*National University of Defense Technology, China*)
 Gang Dang (*National University of Defense Technology, China*)
 Shi-Yao Jin (*National University of Defense Technology, China*)
- 12:10 – 13:40 **Lunch**
- Session 7** **Surfaces** (Chair: Stefanie Hahmann)
- 13:40 – 14:00 **Hausdorff and Minimal Distances between Parametric Freeforms in \mathbb{R}^2 and \mathbb{R}^3**
 Gershon Elber (*Dept. of Computer Science, Haifa, Israel*)
 Tom Grandine (*The Boeing Company, Seattle, USA*)
- 14:00 – 14:20 **Note on Industrial Applications of Hu's Surface Extension Algorithm**
 Yu Zang (*Tsinghua University, Beijing, China*)
 Yong-Jin Liu (*Tsinghua University, Beijing, China*)
 Yu-Kun Lain (*Tsinghua University, Beijing, China*)
- 14:20 – 14:40 **Shifting Planes to Follow a Surface of Revolution**
 Eng-Wee Chionh (*National University of Singapore, Singapore*)
- 14:40 – 15:00 **Parametric Polynomial Minimal Surfaces of Degree Six with Isothermal Parameter**
 Gang Xu (*Zhejiang University, China*)
 Guozhao Wang (*Zhejiang University, China*)
- 15:00 – 15:20 **Coffee Break**
- Session 8** **Filtering and denoising** (Chair: Deok-Soo Kim)

- 15:20 – 15:40 **Fast and Local Fairing of B-Spline Curves and Surfaces**
Péter Salvi (*University of Tokyo*)
Hiromasa Suzuki (*University of Tokyo*)
Tamás Várady (*Geomagic Hungary*)
- 15:40 – 16:00 **Comparing Small Visual Differences between Conforming Meshes**
Zhe Bian (*Tsinghua University, Beijing, China*)
Shi-Min Hu (*Tsinghua University, Beijing, China*)
Ralph Martin (*Cardiff University, Cardiff, UK*)
- 16:00 – 16:20 **A multistep approach to restoration of locally undersampled meshes**
Alexandra Bac (*Ecole Supérieure d'Ingenieurs de Luminy, France*)
Nam-Van Tran (*Ecole Supérieure d'Ingenieurs de Luminy, France*)
Marc Daniel (*Ecole Supérieure d'Ingenieurs de Luminy, France*)
- 16:20 – 16:40 **Noise Removal Based on the Variation of Digitized Energy**
Qin Zhang (*School of Natural Science, Technology University, China*)
Jie Sun (*School of Mathematical Sciences, Capital Normal University, China*)
Guoliang Xu (*Chinese Academy of Sciences, Beijing, China*)
- 16:40 – 17:10 **Short Oral Presentations** (Chair: Georges-Pierre Bonneau)
- A Shape Feature Based Simplification Method for Deforming Meshes**
Shixue Zhang (*University of Macau, China*)
Enhua Wu (*University of Macau and Chinese Academy of Sciences, China*)
- Deformation and Smooth Joining of Mesh Models for Cardiac Surgical Simulation**
Hao Li (*National University of Singapore, Singapore*)
Wee Kheng Leow (*National University of Singapore, Singapore*)
Ing-Sh Chiu (*National Taiwan University Hospital, Taiwan*)
Shu-Chien Huang (*National Taiwan University Hospital, Taiwan*)
- The Structure of V-system Over Triangulated Domains**
Ruixia Song (*North China University of Technology, China*)
Xiaochun Wang (*Beijing Forestry University, China*)
Meifang Ou (*North China University of Technology, China*)
Jian Li (*University of Science and Tech., China*)
- A Volumetric Framework for the Modeling and Rendering of Dynamic and Heterogeneous Scenes**
Duoduo Liao (*George Washington University, USA*)
Shiaofen Fang (*Indiana University-Purdue, USA*)
- Trimming Bézier Surfaces on Bézier Surfaces via Blossoming**
Lian-Qiang Yang (*Xiamen university, China*)
Xiao-Ming Zeng (*Xiamen university, China*)
- A Mesh Simplification Method Using Noble Optimal Positioning**
Han Kyun Choi (*Dept. of Mechatronics at GIST, Korea*)
Hyun Soo Kim (*Dept. of Mechatronics at GIST, Korea*)
Kwan H. Lee (*Dept. of Mechatronics at GIST, Korea*)
- Digital Design for Functionally Graded Material Components Rapid Prototyping Manufacturing**

Su Wang (*Beijing University of Aeronautics and Astronautics, China*)

Yuming Zhu (*Beijing University of Aeronautics and Astronautics, China*)

Chin-Sheng Chen (*Florida International University, USA*)

Xinxiong Zhu (*Beijing University of Aeronautics and Astronautics, China*)

Protein surface modeling using active contour model

Junping Xiang (*Key Laboratory of Intelligent Computing and Signal Processing, China*)

Maolin Hu (*Anhui University, China*)

17:10 – 18:00

Poster Session

18:15 – 20:00

Banquet

Day Three

Friday, 25 April 2008

09:00 – 09:45

Invited talk 3 (Chair: Gregory M. Nielson)

An evaluation based approach to deal with intersection problems including topology determination and offset manipulation

Laureano Gonzalez-Vega (*University of Cantabria, Spain*)

Session 9

Modeling and FEM (Chair: Shimin Hu)

09:50 – 10:10

Physically-based Surface Texture Synthesis Using a Coupled Finite Element System

Chandrajit Bajaj (*The University of Texas at Austin, USA*)

Yongjie Zhang (*Carnegie Mellon University, USA*)

Guoliang Xu (*Chinese Academy of Sciences, China*)

10:10 – 10:30

Automatic PolyCube-Maps

Juncong Lin (*Zhejiang University, Hangzhou, China*)

Xiaogang Jin (*Zhejiang University, Hangzhou, China*)

Zhengwen Fan (*Zhejiang University, Hangzhou, China*)

Charlie C.L. Wang (*Chinese University of Hong Kong, China*)

10:30 – 10:50

Lepp Terminal Centroid Method for Quality Triangulation: a Study on a New Algorithm

Maria-Cecilia Rivara (*University of Chile*)

Carlo Calderon (*University of Chile*)

10:50 – 11:10

Coffee Break

Session 10

Matching and Modeling (Chair: Hua Li)

11:10 – 11:30

Variational Skinning of an Ordered Set of Discrete 2D Balls

Greg Slabaugh (*Siemens Corporate Research, USA*)

Gozde Unal (*Sabanci University, Istanbul Turkey*)

Tong Fang (*Siemens Corporate Research, USA*)

Jarek Rossignac (*Georgia Institute of Technology, Atlanta, USA*)

Brian Whited (*Georgia Institute of Technology, Atlanta, USA*)

11:30 – 11:50

Solving Systems of 3D Geometric Constraints with Non-rigid Clusters

Hilderick A. van der Meiden (*Delft University of Technology, The Netherlands*)

Willem F. Bronsvort (*Delft University of Technology, The Netherlands*)

11:50 – 12:10 **Planar Shape Matching and Feature Extraction using Shape Profile**
Yong-Jin Liu (*Tsinghua University, China*)
Tao Chen (*Tsinghua University, China*)
Xiao-Yu Chen (*The Hong Kong University of Science and Technology, China*)
Terry K. Chang (*The Hong Kong University of Science and Technology, China*)
Matthew M.F. Yuen (*The Hong Kong University of Science and Technology, China*)

12:10 – 12:30 **Closing Session**

12:30 – 14:00 **Lunch**

14:00 – 18:00 **City Touring**

- Map of the venues

