

Book Publication

1. Xianfeng Gu and Shing-Tung Yau. **Computational Conformal Geometry**, *Series: Advanced Lectures in Mathematics, Vol 3, Publisher: International Press and Higher Education Press, ISBN 978-1-57146-171-1, 2007.*
2. Feng Luo, Xianfeng Gu and Junfei Dai. **Variational Principles for Discrete Surfaces**, *Series: Advanced Lectures in Mathematics, Vol 4, Publisher: International Press and Higher Education Press, ISBN 978-1-57146-172-8, 2007.*
3. Wei Zeng, Xianfeng Gu, **Ricci Flow for Shape Analysis and Surface Registration - Theories, Algorithms and Applications**, *Springer, 2012.*

Book Chapter Publication

4. Xianfeng Gu, Wei Zeng, Lok Ming Lui, Feng Luo and Shing-Tung Yau, **Recent Development of Computational Conformal Geometry** in “Selected Expository Works of Shing-Tung Yau with Commentary”, *Advanced Lectures in Mathematics 29*, pages 1069-1120, 2014.
5. Xianfeng Gu, **Conformal Geometry Applied in Engineering and Medical Imaging** in “Mathematics and Culture”, 2013.
6. Huafeng Wang, Lihong Li, Hao Han, Yunhong Wang, Weifeng Lv, Xianfeng Gu and Zhenrong Liang, **A Novel Colon Wall Flattening Model for Computed Tomographic Colonography: Method and Validation** in “Bio-Imaging and Visualization for Patient-Customized Simulations”, Springer 2014.
7. Wei Zeng, Rui Shi, Zhengyu Su and Xianfeng Gu, **Colon Surface Registration Using Ricci Flow** in “Abdomen and Thoracic Imaging - An Engineering & Clinical Perspective”, ed. Yunqian Ma and Yun Fu, Springer. 2013.
8. Wei Zeng, Rui Shi, Zhengyu Su and Xianfeng Gu, **Efficient Topological Cleaning for Visual Colon Surface Flattening** in “Abdomen and Thoracic Imaging - An Engineering & Clinical Perspective”, ed. Ayman El-baz, Springer. 2013.
9. Xianfeng Gu, Wei Zeng, Jian Sun, Ren Guo and Feng Luo, **Discrete Heat Kernel Determines Metric** in “Manifold Learning Theory and Applications”, ed. Yunqian Ma and Yun Fu, Chapter VIII. 2011.
10. Wei Zeng, Feng Luo, Shing-Tung Yau and Xianfeng Gu, **3D Surface Representation Using Ricci Flow** in “Computer Vision: From Surfaces to 3D Objects”, ed. Christopher W. Tyler, Chapter IV, 65-94. Boca Raton, FL: CRC Press. 2010.
11. Xianfeng Gu, Feng Luo, Wei Zeng and Shing-Tung Yau, **Discrete Ricci flow for Surface and 3-Manifold** in “Manifold Learning Theory and Applications”, ed. Yunqian Ma and Yun Fu, Chapter VII. 2011.
12. Xiaotian Yin, Miao Jin, Feng Luo and Xianfeng Gu. **Discrete Curvature Flow for Surfaces and 3-Manifolds** in “Emerging Trends in Visual Computing”, *Series:Lecture Notes on Computer Science, Publisher:Springer-Verlag, to appear, 2009.*
13. Xianfeng Gu, Yalin Wang, H.-S. Cheng, L.-T. Cheng and Shing-Tung Yau. **Geometric Methods in Engineering Applications** in “Mathematics and Computation, a Contemporary View”, *Series: Abel Symposia, Vol.3, Editors: Hans Munthe-Kaas and Brynjulf Owren, Publisher:Springer-Verlag, ISBN:978-3-540-68848-8, to appear, 2009.*

14. Xianfeng Gu. **Yau's Contributions to Engineering Fields**, in "Geometry and Analysis", Advanced Lectures in Mathematics 17, Vol. I, pp. 119–132, High Education Press, Editor L. Ji.

Refereed Journal Publications

15. Rui Shi, Wei Zeng, Zhengyu Su, Jian Jiang, Hana Damasio, Zhonglin Lu, Yalin Wang, Shing-Tung Yau and Xianfeng Gu, **Hyperbolic Harmonic Mapping for Surface Registration**, IEEE Transaction on Pattern Analysis and Machine Intelligence (TPAMI), accepted, 2016.
16. Kehua Su, Wei Chen, Na Lei, Junwei Zhang, Kun Qian and Xianfeng Gu, **Volume Preserving Mesh Parameterization based on Optimal Mass Transportation**, Journal of Computer-Aided Design (CAD), Accepted, 2016.
17. Kehua Su, Cui Li, Kun Qian, Na Lei, Junwei Zhang, Ming Zhang and Xianfeng Gu, **Area-preserving Mesh Parameterization for Poly-Annulus Surfaces Based on Optimal Mass Transportation**, Journal of Computer Aided Geometric Design (CAD), accepted, 2016.
18. Kehua Su, Wei Chen, Na Lei, Li Cui, Jian Jiang and Xianfeng Gu, **Measure Controllable Volumetric Mesh Parameterization**, vol 78. pages 188-198, Computer-Aided Geometric Design (CAD), 2016.
19. Saad Nadeem, Zhengyu Su, Wei Zeng, Arie Kaufman and Xianfeng Gu, **Spherical Parameterization Balancing Angle and Area Distortions**, IEEE Transaction on Visualization and Computer Graphics, accepted 2016.
20. Xianfeng Gu, Feng Luo, Jian Sun and Shing-Tung Yau, **Variational Principles for Minkowski Type Problems, Discrete Optimal Transport, and Discrete Monge-Ampere Equations**, Vol. 20, No. 2, pp. 383-398, Asian Journal of Mathematics (AJM), April 2016.
21. Xin Fan, Yuyao Feng, Zhi Chai, David Xianfeng Gu, and Zhongxuan Luo, Image Morphing with Conformal Welding, The Visual Computer, Accepted, 2015.
22. Xiang Zeng, Chao-Hui Wang, Xianfeng Gu, Higher-order Graph Principles towards Non-rigid Surface Registration, IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), accepted, 2015.
23. Xiaoning Wang, Xiang Ying, Yong-Jin Liu, Shi-Qing Xin, Wenping Wang, Xianfeng Gu, Wolfgang Mueller-Wittig and Ying He, Intrinsic computation of centroidal Voronoi tessellation (CVT) on meshes, Computer-Aided Design (CAD) 58: 51-61, 2015.
24. Hao Peng, Xu Wang, Ye Duan, Scott H. Frey, Xianfeng Gu: Brain morphometry on congenital hand deformities based on Teichmüller space theory. Computer-Aided Design 58: 84-91 (2015)
25. Min Zhang, Wei Zeng, Ren Guo, Feng Luo, Xianfeng David Gu: Survey on Discrete Surface Ricci Flow. J. Comput. Sci. Technol. 30(3): 598-613 (2015)
26. Ka Chun Lam, Xianfeng Gu, Lok Ming Lui: Landmark constrained genus-one surface Teichmüller map applied to surface registration in medical imaging. Medical Image Analysis 25(1): 45-55 (2015)
27. Lok Ming Lui, Xianfeng Gu, Shing-Tung Yau: Convergence of an iterative algorithm for Teichmüller maps via harmonic energy optimization. Math. Comput. 84(296) (2015)
28. Juncong Lin, Jiazhi Xia, Xing Gao, Minghong Liao, Ying He, Xianfeng Gu: Interior structure transfer via harmonic 1-forms. Multimedia Tools Appl. 74(1): 139-158 (2015)

29. Jian Sun, Tianqi Wu, Xianfeng Gu, Feng Luo: Discrete Conformal Deformation: Algorithm and Experiments. *SIAM J. Imaging Sciences* 8(3): 1421-1456 (2015)
30. Minqi Zhang, Feng Li, Ying He, Juncong Lin, Xianfeng Gu, Jun Luo: GRIP: Greedy Routing through dIstributed Parametrization for guaranteed delivery in WSNs. *Wireless Networks* 21(1): 67-80 (2015)
31. Mayank Goswami, Xianfeng Gu, Vamsi Pritham Pingali and Gaurish Telang, Computing Teichmuller maps between polygons, *Foundations of Computational Mathematics*, accepted, 2015.
32. Siming Li, Dengpan Zhou, Wei Zeng, Jie Gao, Xianfeng Gu, Compact Conformal Map for Greedy Routing in Wireless Mobile Sensor Networks, accepted, *IEEE Transactions on Mobile Computing* (2015)
33. K.C. Lam, X.F. Gu, L.M. Lui, Landmark Constrained Genus-one Surface Teichmüller Map Applied to Surface Registration in Medical Imaging, accepted, *Medical Image Analysis* (2015)
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36. Su Xia, Xiaotian Yin, Hongyi Wu, Miao Jin, Xianfeng David Gu: Deterministic Greedy Routing with Guaranteed Delivery in 3D Wireless Sensor Networks. *Axioms* 3(2): 177-201 (2014)
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40. Lok Ming Lui, Xianfeng Gu, Shing-Tung Yau, **Convergence of an Iterative Algorithm for Teichmüller Maps via Harmonic Energy Optimization**, accepted by *AMS Mathematics of Computation* (2014).
41. Min Zhang, Ren Guo, Wei Zeng, Feng Luo, Shing-Tung Yau and Xianfeng Gu, **The Unified Discrete Surface Ricci Flow**, accepted by *Graphics and Models* (2014).
42. Wei Luo, Zengyu Su, Min Zhang, Wei Zeng, Junfei Dai and Xianfeng Gu, **Shape Signature based on Ricci Flow and Optimal Mass Transportation**, accepted by *SPIE Journal of Optical Engineering*, Special issue on High-Speed 3-D Optical Metrology and Applications (2014).
43. Tsz-Ching Ng, Xianfeng Gu, Lok Ming Lui: Computing Extremal Teichmüller Map of Multiply-Connected Domains Via Beltrami Holomorphic Flow. *J. Sci. Comput.* 60(2): 249-275 (2014)

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47. Jin-shan Pan, Risheng Liu, Zhixun Su, Xianfeng Gu, **Kernel estimation from salient structure for robust motion deblurring**. *Sig. Proc.: Image Comm.* Vol. 28, Issue 9, Pages 1156-1170, (2013)
48. Jun Wang, Kai Xu, Ligang Liu, Junjie Cao, Shengjun Liu, Zeyun Yu and Xianfeng Gu, **Consolidation of Low-Quality Point Clouds from Outdoor Scenes**, *Computer Graphics Forum*, Vol. 32, Issue 5, pages 207-216, 2013.
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57. Lok Ming Lui, Wei Zeng, Shing-Tung Yau and Xianfeng Gu, **Shape Analysis of Planar Multiply-connected Objects using Conformal Welding** *IEEE Transactions on Pattern Analysis and Machine Intelligence (IEEE TPAMI)*, (accepted) 2013.
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