

## Curriculum Vitae

Feng Luo

### Research Interests

My main work is in geometry and topology in dimensions 2, 3 and 4. I have also worked on computer graphics and computer networking recently.

### Education

Ph.D., Math., UC San Diego, 1989. Thesis advisor: Michael H. Freedman.

Diploma, English Language, Zhong-Shan University, China, 1984.

B.S., Math., Peking University, China, 1983.

### Employment

Assistant Professor-Full Professor, Rutgers University, 1993-present

Visiting Assistant Professor, Univ. of California, San Diego, 1992-1993.

Hedrick Assistant Professor, Univ. of California, Los Angeles, 1989-1992.

### Guest Position

Professor, Yau Mathematical Sciences Center, Tsinghua University, Beijing, China 2013-present

Professor, Center of Mathematical Sciences, Zhejiang University, China, 2003-present.

### Honors

Rutgers Board of Trustees Fellowship for Scholarly Excellence, 1999.

Chang-Jiang Scholarship Program Award, Ministry of Education, China, 2005-2008.

### NSF Grant awards PI for the following research grants

NSF DMS FRG 1760527 (2018-2021), NSF DMS 1811878 (2018-2021), NSF DMS 1737876 (2017-2020), NSF DMS 1405106 (2014-2018), NSF DMS 1222663 (2012-2016), NSF DMS 1207832 (2012-2015), NSF DMS 1105808 (2011-2014), NSF CCF 0830572 (2009-2012), NSF DMS 0625935 (2006-2009), NSF DMS 0604352 (2006-2009), NSF DMS 0103843 (2001-2004), NSF DMS 9704490 (1997-2000), NSF DMS 9401778 (1994-1997).

## PROFESSIONAL SERVICES

### Editorial board member

Asian Journal of Mathematics

Pure and Applied Mathematics Quarterly

Notices of the International Congress of Chinese Mathematicians

**Referee** for professional Journals: *J. Differential Geometry*, *Geometry and Topology*, *Journal of Topology*, *Topology*, *Ann. of Math*, *Mathematical Research Letters*, *Duke Journal of Mathematics*, *International Mathematics Research Notices* and many others.

**Reviewer and panelist** for NSF proposals

**Fellow of Professional Societies** Fellow of American Mathematical Society

### Co-organizer of programs and conferences

Spherical surfaces and related topics, Cortona, Italy, June 14-19, 2020

Geometry, Quantum Topology and Asymptotics 2018, conference at the Sandbjerg Estate, Denmark, July 9-13, 2018

Summer school on Geometry, Quantum Topology and Asymptotics 2018,  
 Confucius Institute, University of Geneva, Switzerland, July 2-6, 2018  
 Scientific committee, Classical and quantum hyperbolic geometry and topology,  
 Orsay, France, July 6-10, 2015  
 Invariants in low dimensional geometry, Gazi University, Ankara, Turkey,  
 August 5-10, 2015  
 Geometry, Quantum Topology and Asymptotics, University of Geneva, Switzerland,  
 June 20-July 5, 2014  
 Geometry and analysis, Capital Normal University, Beijing, June 13-14, 2014  
 Introduction to Modern Mathematics, Center of Mathematics Science, Hangzhou,  
 China, Aug. 2011  
 Topology and Geometry in Dimension-3, Stillwater, Oklahoma, June, 2010  
 Geometric Topology, Peking University, Beijing, China, July 2007  
 Low-dimensional Topology and Physics, Tianjin, China, Aug. 2007  
 International Summer School in Low-dimensional Topology, Dalian, China,  
 July 2006  
 East Asia School of Knots and Related Topics, Dalian China, July 2005  
 International Geometric Topology Conference, Xian, China, July 2002

#### **Ph.D. Student Supervision**

Xiaoping Zhu, Ph. D. candidate, Rutgers, 2019  
 Andy Huynh, Ph.D. candidate, Rutgers, 2019  
 Edward Chien, Ph.D. Rutgers University, 2015. First position: postdoc at  
 Bar Ilan University, Israel. Current position: tenure-track assistant professor at  
 computer science department at Boston University  
 Tian Yang, Ph.D. 2013, Rutgers University. First position: Szego Assistant  
 Professor at Stanford University. Current position: tenure-track assistant  
 professor at Texas A&M University  
 Priyam Patel, Ph.D. 2013, Rutgers University. First position: Golomb Assistant  
 Professor at Purdue University. Current position: tenure-track assistant  
 professor at University of Utah  
 Susovan Pal, Ph. D. 2013, Rutgers University. First position: postdoc at  
 the University of Paris-Sud, France  
 Ren Guo, Ph. D., Rutgers University, 2008. First position: Dunham Jackson  
 Assistant Professor, University of Minnesota. Current position: associate  
 professor at Oregon State University  
 Yi Liu, Ph. D. Rutgers University, 1999. First position: industry  
 Daniel Kling, Ph. D. Rutgers University, 1997. First position: Rutgers  
 University, Engineering department. Kling received the 32nd Edison Patent  
 Awards based on his Ph.D. thesis

#### **Master Degree Student Supervision**

Taylor Burmeister, M.S. Rutgers University, 2012  
 Raymond Nacarino, M.S. Rutgers University, 2004

#### **Postdoctoral Supervision**

Chenxi Wu, Hill assistant professor at Rutgers (2017-2020). Starting Fall  
 2020, Chenxi will be a tenure-track assistant professor at University of Wisconsin  
 at Madison.  
 Julien Roger, Hill assistant professor at Rutgers (2010-2013)

Effie Kalfagianni, Hill assistant professor at Rutgers (1995-1998). Current position: full professor at Michigan State University

Murat Savas, Rutgers University (2014-2015). Current position: assistant professor at Gazi University, Turkey.

## **PUBLICATIONS**

### **Books**

1. *The Ricci flow: techniques and applications. Part IV: Long-Time Solutions and Related Topics*, Chow, Bennett; Chu, Sun-Chin; Glickenstein, David; Guenther, Christine; Isenberg, James; Ivey, Tom; Knopf, Dan; Lu, Peng; Luo, Feng; Ni, Lei. *Mathematical Surveys and Monographs*, 206. American Mathematical Society, Providence, RI, 2015. xx+374 pp.
2. *The Ricci flow: techniques and applications. Part III. Geometric-analytic aspects*, Chow, Bennett; Chu, Sun-Chin; Glickenstein, David; Guenther, Christine; Isenberg, James; Ivey, Tom; Knopf, Dan; Lu, Peng; Luo, Feng; Ni, Lei. *Mathematical Surveys and Monographs*, 163. American Mathematical Society, Providence, RI, 2010. xx+517 pp.
3. *The Ricci flow: techniques and applications. Part II. Analytic aspects*, Chow, Bennett; Chu, Sun-Chin; Glickenstein, David; Guenther, Christine; Isenberg, James; Ivey, Tom; Knopf, Dan; Lu, Peng; Luo, Feng; Ni, Lei; *Mathematical Surveys and Monographs*, 144. American Mathematical Society, Providence, RI, 2008. xxvi+458 pp.
4. *Variational principles for discrete surfaces*, Luo Feng; Gu, Xianfeng David; Dai, Junfei. *Advanced Lectures in Mathematics International Press*, Somerville, MA; Higher Education Press, Beijing, 2008. iv+146 pp.
5. *The Ricci flow: techniques and applications. Part I. Geometric aspects*, Chow, Bennett; Chu, Sun-Chin; Glickenstein, David; Guenther, Christine; Isenberg, James; Ivey, Tom; Knopf, Dan; Lu, Peng; Luo, Feng; Ni, Lei. *Mathematical Surveys and Monographs*, 135. American Mathematical Society, Providence, RI, 2007. xxiv+536 pp.
6. *Selected applications of geometry to low-dimensional topology*, Michael H. Freedman and Feng Luo. *University Lecture Series*, Vol. 1, American Math. Soc., 1990.

### **Mathematical and Computer Science Papers Appeared or Accepted for Publication in Journals (refereed papers)**

- 1.
2. Quadrilateral Mesh Generation: Meromorphic Quartic Differentials and Abel-Jacobi Condition, with Na Lei, Xiaopeng Zheng, Zhongxuan Luo and Xianfeng Gu, *Comput. Methods Appl. Mech. Engrg.* 366 (2020), 112980.
3. Community Detection on Networks with Ricci Flow, with Chien-Chun Ni, Yu-Yao Lin, Jie Gao, *Scientific Reports*, 9, 9984, (2019), Nature Publication Group.

4. An effective Lie-Kolchin theorem for quasi-unipotent matrices. With Kobayashi, Thomas; Sun, Hongbin, *Linear Algebra Appl.* 581 (2019), 304–323.
5. Convergence of discrete conformal geometry and computation of uniformization maps, with Gu, David; Wu, Tianqi, *Asian J. Math.* 23 (2019), no. 1, 21–34.
6. Volume and rigidity of hyperbolic polyhedral 3-manifolds, with Tian Yang, *J. of Topology*, 11, (2018), no. 1, 1–29.
7. A discrete uniformization theorem for polyhedral surfaces II, with Gu, David; Guo, Ren; Sun, Jian; Wu, Tianqi, *J. Diff. Geometry*, 109 (2018) , no. 3, 431–466
8. A discrete uniformization theorem for polyhedral surfaces, with Gu, David; Sun, Jian; Wu, Tianqi, *J. Diff. Geometry*, 109 (2018), no. 2, 223–256.
9. The Riemann mapping theorem and its discrete counterparts. From Riemann to differential geometry and relativity, 367–388, Springer, Cham, 2017.
10. Discrete surface Ricci flow, with Gu, David Xianfeng; Zeng, Wei; Lui, Lok Ming; Yau, Shing-Tung, Proceedings of the Sixth International Congress of Chinese Mathematicians. Vol. II, 477–504, Adv. Lect. Math. (ALM), 37, Int. Press, Somerville, MA, 2017.
11. A new combinatorial class of 3-manifold triangulations, with Stephan Tillmann, *Asian Journal of Math*, 21 (2017), no. 3, 543–569.
12. A TQFT of Turaev-Viro type on shaped triangulations, with Rinat Kashaev, Grigory Vartanov, *Annales Henri Poincaré*, 17 (2016), no.5, pp. 1109–1143.
13. Variational Principles for Minkowski Type Problems, Discrete Optimal Transport, and Discrete Monge-Ampere Equations, with Xianfeng Gu, Jian Sun, S.-T. Yau, *Asian Journal of Math*, 20, (2016), no. 2, pp. 383–398.
14. Solving the Thurston’s equation in a commutative ring, *Journal of Topology*, 9 (2016), no. 1, 143–160
15. Survey on discrete surface Ricci flow, with Zhang, Min; Zeng, Wei; Guo, Ren; Gu, Xianfeng David, *J. Comput. Sci. Tech.* 30 (2015), no. 3, 598–613.
16. Discrete conformal deformation: algorithm and experiments. with Sun, Jian; Wu, Tianqi; Gu, Xianfeng; *SIAM J. Imaging Sci.* 8 (2015), no. 3, 1421–1456.
17. A dilogarithm identity on the moduli space of curves, with Ser Peow Tan, *J. Diff. Geometry*, 97, Number 2 (2014), 255–274.
18. Rigidity of polyhedral surfaces, I, *J. Diff. Geometry*, 96 (2014), no. 1, 241–302

19. Volume optimization, normal surfaces and Thurston's equation on triangulated 3-manifolds, *J. Diff. Geometry*, 93 (2013), no. 2, 299–326.
20. Volume maximization and the extended hyperbolic space, with Jean-Marc Schlenker, *Proc. Amer. Math. Soc.* 140 (2012) 1053–1068
21. Thurston's spinning construction and solutions to the hyperbolic gluing equations for closed hyperbolic 3-manifolds, with Stephan Tillmann and Tian Yang, *Proc. Amer. Math. Soc.* 141 (2013), no. 1, 335–350.
22. Rigidity of polyhedral surfaces, III, *Geometry & Topology*, 15 (2011), 2299–2319.
23. Cell decompositions of Teichmüller spaces of surfaces with boundary, with Ren Guo, *Pacific Journal of Mathematics*, 253, no 2, 423–438, 2011.
24. Simple loops on surfaces and their intersection numbers, *J. Diff. Geometry*. 85 (2010), no. 1, 73–115,
25. Rigidity of polyhedral surfaces, II, with Ren Guo, *Geometry & Topology*, 13 (2009), no. 3, 1265–1312
26. Geodesic ideal triangulations exist virtually, with Schleimer, Saul; Tillmann, Stephan, *Proc. Amer. Math. Soc.* 136 (2008), no. 7, 2625–2630.
27. Comparing corresponding dihedral angles on classical geometric simplices. with Au, Thomas Kwok-Keung; Stong, Richard, *Asian J. Math.* 12 (2008), no. 2, 203–212.
28. 3-Dimensional Schläefli formula and its generalization, *Comm. Contemp. Math.* 10, (2008), 835–842
29. Angle structures and normal surfaces, with Stephen Tillman, *Trans. Amer. Math. Soc.* 360 (2008), no. 6, 2849–2866.
30. Volume and angle structures on 3-manifolds, *Asian J. Math.* 11 (2007), no. 4, 555–566.
31. On Teichmüller space of surfaces with boundary, *Duke Math. J.* 139 (2007), no. 3, 463–482.
32. Continuity of the volume of simplices in classical geometry, *Commun. Contemp. Math.* 8 (2006), no. 3, 411–431.
33. A characterization of spherical cone metrics on surfaces, *J. Diff. Geometry*, 74 (2006), no 3, 407–424.
34. A combinatorial curvature flow for compact 3-manifolds with boundary, *Electron. Res. Announc. Amer. Math. Soc.* 11 (2005), 12–20.
35. Measured lamination spaces on surfaces and geometric intersection numbers, with Richard Stong, 12 pages, *Topology Appl.*, 136 (2004), no. 1–3, 205–217.
36. Combinatorial Yamabe flow on surfaces, *Communications of contemporary mathematics*, 5 (2004), no 3, 513–530.

37. Dehn-Thurston coordinates for curves on surfaces, with R. Stong, *Communications in Analysis and Geometry*, 12 (2004), 1–41.
38. Heegaard diagrams and the handlebody groups, *Topology and its Applications*, 129 (2003), no. 2, 111-127.
39. Combinatorial Ricci flow in dimension 2, with B. Chow, *J. Diff. Geometry*, 63 (2003), no. 1, 97–129.
40. Lengths of simple loops on surfaces with a hyperbolic metric, with R. Stong, *Geometry and Topology*, 6(2002), 495-521.
41. Automorphisms of the curve complex, *Topology*, 39 (2000), no. 2, 283–298.
42. Groethendieck’s reconstruction principle and 2-dimensional topology and geometry, *Communications of contemporary mathematics*, 1 (1999), no. 2, 125-153.
43. Characters of  $SL(2)$  representations of groups, *J. Diff. Geometry*. **53**, no. 3, 575–626, 1999.
44. Geodesic length functions and Teichmüller spaces. *J. Diff. Geometry*. **48**, 275-317, 1998.
45. Simple loops on surfaces and their intersection numbers, a research announcement, *Math. Res. Letters*, **5**, 47-56, 1998.
46. On Heegaard diagrams. *Math. Res. Letters*, **4**, 365-373, 1997.
47. Conformal embedding of a disc with a Lorentz metric into the plane. with R. Stong, *Math. Ann.*, **309**, 359-373, 1997.
48. A presentation of the mapping class group. *Math. Res. Letters*, **4**, 735-739, 1997.
49. On a problem of Fenchel. *Geometriae Dedicata*, **64**, no. 3, 277-282, 1997.
50. On non-separating simple closed curves in a compact surface. *Topology*, **36**, no. 2, 381-410, 1997.
51. Geodesic length functions and Teichmüller spaces. *Electron. Res. Announc. Amer. Math. Soc.* **2**, no. 1, 34-41, 1996.
52. Möbius cone structures on 3-manifolds. *J. Diff. Geometry*. **41**, no. 2, 319-341, 1995.
53. Möbius structures on Seifert Manifolds, I. *J. Diff. Geometry*. **42**, no. 3, 634-664, 1995.
54. Equivariant isotopy of unknots to round circles. with M. Freedman, *Topology Appl.* **64**, no. 1, 59-74, 1995.
55. On non-separating simple closed curves in a compact surface. *Electron. Res. Announc. Amer. Math. Soc.* **1**, no. 1, 18-25, 1995.
56. Möbius cone structures on 3-manifolds. *Math. Res. Lett.* **1**, 257-261, 1994.

57. Triangulations in Möbius geometry. *Trans. Amer. Math. Soc.* **337**, no.1, 181-193, 1993.
58. Combinatorics of the triangulations of 3-manifolds. with R. Stong. *Trans. Amer. Math. Soc.* **337**, no. 2, 891-906, 1993.
59. Monodromy groups of projective structures on punctured surfaces. *Invent. Math.* **111**, 541-555, 1993.
60. Actions of finite groups on knot complements. *Pacific J. Math.* **154**, no. 2, 317-329, 1992.
61. Constructing conformally flat structures on some Seifert 3-manifolds. *Math. Ann.* **294**, 449-458, 1992.
62. Liouville equations and spherical convex polytopes. with G. Tian. *Proc. Amer. Math. Soc.* **116**, no. 4, 1119-1129, 1992.
63. The existence of  $K(\pi, 1)$  4-manifolds which are rational homology 4-sphere. *Proc. Amer. Math. Soc.* **104**, 1315-1321, 1988.
64. Representing homology classes of  $CP^2 \# \overline{CP^2}$ . *Pacific J. Math.* **133**, no. 1, 137-140, 1988.
65. Triangulated 3-manifolds: from Haken's normal surfaces to Thurston's algebraic equation, *Contemp. Math.*, 541, 183-225, Amer. Math. Soc., Providence, RI, 2011.
66. A note on complete hyperbolic structures on ideal triangulated 3-manifolds, *Contemp. Math.*, 560, 19-26, Amer. Math. Soc., Providence, RI, 2011.
67. Some applications of a multiplicative structure on simple loops in surfaces. *Knots, braids, and mapping class groups* —papers dedicated to Joan S. Birman (New York, 1998), 123–129, AMS/IP Stud. Adv. Math., 24, Amer. Math. Soc., Providence, RI, 2001.
68. Automorphisms of Thurston's space of measured laminations. *In the tradition of Ahlfors and Bers* (Stony Brook, NY, 1998), 221–225, Contemp. Math., 256, Amer. Math. Soc., Providence, RI, 2000.
69. Yau's work on minimal surfaces and 3-manifolds. Geometry and analysis. No. 1, 181–183, Adv. Lect. Math. (ALM), 17, Int. Press, Somerville, MA, 2011.
70. Lectures on the mapping class groups, with Thomas Au, and Tian Yang, *Transformation groups and moduli spaces of curves*, edited by L. Ji and S. T. Yau, 21-62, International Press, 2010.
71. Variational principles on triangulated surfaces, in *Handbook of Geometric Analysis*, vol 1, 259-276, edited by Lizhen Ji, Peter Li, Richard Schoen, and Leon Simon. International Press of Boston, MA, 2008.

72.  $Z_2$ -systolic freedom and quantum codes, with M. Freedman and D. Meyer, *The Mathematics of Quantum Computation*, 287-320, Ranee K. Brylinski and Goong Chen, eds., Comput. Math. Ser., Chapman & Hall/CRC, Boca Raton, FL, 2002.
73. Discrete Heat Kernel Determines Discrete Riemannian Metric. Xianfeng David Gu, Ren Guo, Feng Luo, Wei Zeng. To appear in *Journal of Graphical Models*, 2012.
74. Computing Quasiconformal Maps Using an Auxiliary Metric and Discrete Curvature Flow. W. Zeng, L. M. Lui, F. Luo, T. Chan, S.-T. Yau and X. Gu. *Journal of Numerische Mathematik*, volume 121 (2), pp. 1-33, 2012.
75. Numerical Computation of Surface Conformal Mappings. X. Gu, W. Zeng, F. Luo and S.-T. Yau. *Computational Methods and Functional Theory*, volume 11(2), pp. 747-787, 2011
76. Computing shortest words via shortest loops on hyperbolic surfaces. X Yin, Y Li, W Han, F Luo, XD Gu, ST Yau. *Computer-Aided Design*, volume 43 (11), pp. 1449-1456, 2011.
77. Generalized Discrete Ricci Flow. Y. Yang, R. Guo, F. Luo, S.-M. Hu and X. Gu. *Computer Graphics Forum*, volume 28 (7), pp. 1467-8659, 2009.
78. Recent Advancements in Computational Conformal Geometry. Xianfeng Gu, Feng Luo and Shing-Tung Yau. *Communication on Information and System*, volume 9 (2), pp. 163-196, 2009.
79. Computing Teichmüller Space. M. Jin, W. Zeng, F. Luo and X. Gu. *IEEE Transaction on Visualization and Computer Graphics*, volume 15(3), pp. 504-517, 2009.
80. Computing Constant-Curvature Metrics for Hyperbolic 3-Manifolds with Boundaries Using Truncated Tetrahedral Meshes. X. Yin, M. Jin, F. Luo, and X. Gu. *International Journal of Shape Modeling*, volume 14 (2), pp. 169-188, 2008.
81. Discrete Surface Ricci Flow. M. Jin, J. Kim, F. Luo and X. Gu. *IEEE Transaction on Visualization and Computer Graphics*, volume 14(5), pp. 1030-1043, 2008.
82. Optimal Surface Parameterization Using Inverse Curvature Map. Y. Yang, J. Kim, S.-M. Hu, F. Luo and X. Gu. *IEEE Transaction on Visualization and Computer Graphics*, volume 14(5), pp. 1054-1066, 2008.
83. Manifold Splines with Single Extraordinary Point. X. Gu, Y. He, M. Jin, F. Luo, H. Qin and S.-T. Yau. *Computer-Aided Design*, volume 40(6), pp. 676-690, 2008. (Invited as one of the best papers at ACM SPM'07).
84. Computing General Geometric Structures on Surfaces Using Ricci Flow. M. Jin, F. Luo and X. Gu. *Computer-Aided Design*, volume 39(8), pp. 663-675, 2007. (Invited as one of the best papers at ACM SPM'06).



85. Discrete Ricci flow for surface and 3-manifold. Xianfeng Gu, Wei Zeng, Feng Luo and Shing-Tung Yau. In *Manifold Learning Theory and Applications*, ed. Yunqian Ma and Yun Fu, Chapter 8, pp. 167-208, FL: CRC Press, 2011.
86. Metric and heat kernel. Wei Zeng, Jian Sun, Ren Guo, Feng Luo, and Xianfeng Gu. In *Manifold Learning Theory and Applications*, ed. Chapter 7, pp. 145-166, FL: CRC Press, 2011.
87. 3D Surface Representation Using Ricci Flow. W. Zeng, F. Luo, S.-T. Yau and X. Gu. In *Computer Vision: From Surfaces to 3D Objects*, ed. Christopher W. Tyler, Chapter IV, 65–94. Boca Raton, FL: CRC Press. 2010.
88. Parameterization of Star-Shaped Volumes Using Green's Functions. Jiazhi Xia, Ying He, Shuchu Han, Chi-Wing Fu, Feng Luo, David Gu. Lecture Notes in Computer Science, Volume 6130, Advances in Geometric Modeling and Processing, pp. 219-235, 2010.
89. Discrete Curvature Flows for Surfaces and 3-Manifolds. Xiaotian Yin, Miao Jin, Feng Luo and David Gu. Lecture Notes in Computer Science, Volume 5416, Emerging Trends in Visual Computing, pp. 38-74, 2009.
90. Computing and Visualizing Constant-Curvature Metrics on Hyperbolic 3-Manifolds with Boundaries. Xiaotian Yin, Miao Jin, Feng Luo and Xianfeng David Gu. Lecture Notes in Computer Science, Volume 5358, Advances in Visual Computing, pp. 720-730, 2008.
91. Computing Fundamental Group of General 3-Manifold. Junho Kim, Miao Jin, Qian-Yi Zhou, Feng Luo and Xianfeng Gu. Lecture Notes in Computer Science, Volume 5358, Advances in Visual Computing, pp. 965-974, 2008.
92. Resilient Routing for Sensor Networks using Hyperbolic Embedding of Universal Covering Space. Wei Zeng, Rik Sarkar, Feng Luo, Xianfeng Gu, Jie Gao. Proc. of the 29th Annual IEEE Conference on Computer Communications (INFOCOM2010), pp. 1694-1702, 2010.
93. Greedy Routing with Guaranteed Delivery Using Ricci Flows. Rik Sarkar, Xiaotian Yin, Jie Gao, Feng Luo, Xianfeng David Gu. Proc. of the 8th International Symposium on Information Processing in Sensor Networks (IPSN2009), pp. 97-108, 2009.
94. Recent Advances in Computational Conformal Geometry. Xianfeng Gu, Feng Luo and Shing-Tung Yau. Lecture Notes in Computer Science, Volume 5654, Thirteenth IMA Conference on The Mathematics of Surfaces, pp. 198-222, York, 2009.
95. Surface Quasi-Conformal Mapping by Solving Beltrami Equations. Wei Zeng, Feng Luo, Shing-Tung Yau and Xianfeng Gu. Lecture Notes in Computer Science, Volume 5654, Thirteenth IMA Conference on The Mathematics of Surfaces, pp. 391-408, York, 2009.

96. Canonical Homotopy Class Representative Using Hyperbolic Structure. W. Zeng, M. Jin, F. Luo, and X. Gu. IEEE International Conference on Shape Modeling and Applications (SMI), pp. 171-178, 2009.
97. Computing Fundamental Group of General 3-Manifold. J. Kim, M. Jin, Q. Zhou, F. Luo, and X. Gu. International Symposium on Visual Computing (ISVC2008), pp. 965-974, 2008.
98. Variational Method on Discrete Ricci Flow. M. Jin, J. Kim, F. Luo, and X. Gu. International Workshop on Combinatorial Image Analysis 2008 (IWCIA), Buffalo, 2008.
99. Discrete Curvature Flow for Hyperbolic 3-Manifold with Complete Geodesic Boundaries. X. Yin, M. Jin, F. Luo, X. Gu. International Symposium on Visual Computing (ISVC2008), pp. 720-730, 2008.
100. Manifold Splines with Single Extraordinary Point. X. Gu, Y. He, M. Jin, F. Luo, H. Qin. Proceedings of the 2007 ACM Symposium on Solid and Physical Modeling (SPM2007), pp. 61-72, 2007.
101. Computing Geodesic Spectra of Surfaces. M. Jin, F. Luo, and X. Gu. Proceedings of the 2007 ACM Symposium on Solid and Physical Modeling (SPM2007), pp. 387-393, 2007.
102. Discrete Surface Ricci Flow: Theory and Applications. M. Jin, J. Kim, F. Luo, and X. Gu. Mathematics of Surfaces XII, Vol. 4647, pp. 209-232, 2007.
103. Computing Surface Hyperbolic Structure and Real Projective Structure. M. Jin, F. Luo, and X. Gu. Proceedings of the Tenth ACM Symposium on Solid and Physical Modeling 2006 (SPM2006), pp. 105-116, 2006.

**INVITED TALKS: conferences, colloquium and seminars**

Some of the recent seminar talks: USC, Jan. 14, UC Santa Barbara, Jan. 22, Harvard, Feb. 13, Brown University, Feb. 27, UC San Diego, April 24, 2019, Graduate Center, CUNY April 2020.

1. Banff workshop, Banff, Canada, August, 10-14, 2020
2. Invited speaker, Computational & Algorithmic Topology, Sydney, Australia, July 27-31, 2020
3. Invited speaker, Circle packing and geometric rigidity, ICERM, Brown University, Providence, July 6-10, 2020
4. Invited speaker, Spherical surfaces and related topics , Cortona, Italy, June 14-19, 2020
5. Invited speaker, Characters and Moduli of Surfaces, Nara, Japan, June 8-10, 2020
6. Invited speaker, International Academic Symposium "Mathematical Science of Visualization, and Deepening of Symmetry and Moduli", Osaka, Japan, March 4-9, 2020. (conference deferred)

7. Invited speaker, Frontier of Analysis and Geometry of Teichmüller Spaces, Sanya conference, China, Jan. 6-9, 2020
8. Colloquium speaker, University of California, San Diego, April, 2019.
9. Invited speaker, Discretization in Geometry and Dynamics, Doellnsee-Schorfheide, North of Berlin, Germany, Oct. 8-12, 2018.
10. Invited speaker, Geometric analysis, organized by Centre Henri Lebesgue, University of Brest and University of Nantes, at Station Biologique de Roscoff, France, Oct. 8-13, 2017.
11. Invited speaker, Workshop on Topology: Identifying Order in Complex Systems. University of Pennsylvania, Pennsylvania. Oct. 7, 2017.
12. Invited speaker, Computational Topology and Geometry, FoCM'17, Barcelona, Spain, July 10-19, 2017.
13. Invited speaker, Geometry and Shape Analysis in Biological Sciences, National University of Singapore, Singapore, June 12-16, 2017.
14. Invited speaker, Curvatures of graphs, simplicial complexes and metric spaces, Sanya International Mathematics Forum, Sanya, China, March 13-17, 2017
15. Invited speaker, workshop on geometric topology, Melbourne, Australia, Dec. 10-22, 2016.
16. Invited speaker, Geometry, Topology and Dynamics of Moduli Spaces, National University of Singapore, Singapore, August 15-19, 2016.
17. Invited speaker, the Grothendieck-Teichmüller theory and mapping class groups, Chern Institute of Mathematics, Tianjin, China, July 24-30, 2016,
18. Invited speaker for a lecture series, in the Summer School “Geometric analysis, Synthetic geometry and Topology”, Fourier Institute, University of Grenoble, France, June 20-26, 2016.
19. Invited speaker, Teichmüller theory and low-dimensional topology, Sanya International Mathematics Forum, Sanya, China, Jan. 11-16, 2016.
20. Invited speaker, Geometric Structures on 3-Manifolds, IAS, Princeton, Oct. 5-9, 2015.
21. Colloquium speaker, Purdue University, April 14, 2015
22. Oberwolfach workshop on discrete differential geometry, Germany, March 1-6, 2015
23. Sanya International Mathematics Forum, Sanya, China, Dec. 15-19, 2014.
24. plenary speaker, Knots and Low Dimensional Manifolds, Busan, Korea, August 22-26, 2014.
25. Geometry and physics of Higgs bundles, National University of Singapore, Singapore, August 4-8, 2014.

26. Oberwolfach workshop on Teichmuller Theory and Mapping Class Groups, Germany, Feb. 9-15, 2014.
27. Geometry of Moduli Spaces of Low Dimensional Manifolds, RIMS, Kyoto University, Japan, Nov. 5-8, 2013.
28. Berlin Mathematical School Summer School: Discrete Differential Geometry, Berlin, Germany, Sept. 9-20, 2013.
29. Geometric Topology in New York, Columbia University, August 12-16, 2013.
30. International Congress of Chinese Mathematicians, Taiwan, July 14-19, 2013.
31. Workshop on Minimal Surfaces, 3-Manifold Topology and Related Topics, MIT, April 26-28, 2013.
32. Mapping class groups and categorification, Banff International Research Station, April 7-12, 2013.
33. Invited speaker, International conference on complex geometry, singularities and related fields, Beijing, China, August 3-6, 2012.
34. Invited speaker, Conference on group actions and applications in geometry, topology and analysis, Kunming, China, July 21-29, 2012.
35. Invited speaker, 3-D geometry/imaging conference, Kunming, China, July 19-21, 2012.
36. Oberwolfach workshop on discrete differential geometry, Germany, July 8-14, 2012.
37. Invited speaker, Mapping class groups and quantum topology, University of Strassbourg, France, June 25-29, 2012.
38. Invited speaker, Oberwolfach workshop on Triangulations, Germany, April 28-May 4, 2012.
39. Colloquium speaker, School of Mathematics, Peking University, Beijing, China, April 13, 2012.
40. Invited speaker, AMS special session, Washington D.C., March 18, 2012.
41. Invited speaker, Geometry & Topology Down Under, The University of Melbourne, Australia, July 16-22, 2011.
42. Invited speaker, Geometric Topology of Knots, Scuola Normale Superiore, Pisa, Italy, May 24-27, 2011.
43. Invited speaker, Workshop on Low Dimensional Topology and Geometry, Princeton University, March 14-16, 2011.
44. Invited speaker, International Congress of Chinese Mathematicians, Beijing, December, 2010.

45. Invited speaker, Encounters between mathematicians and theoretical physicists, University of Strassbourg, France, Sept. 1-3, 2010.
46. Invited speaker, Topology, Geometry and Dynamics of character varieties, National University of Singapore, July 19-30, 2010.
47. Invited speaker and co-organizer, Topology and geometry in dimension three, University of Oklahoma, Stillwater, June 4-6, 2010.
48. Invited speaker, Barrett Memorial Lectures, University of Tennessee, Knoxville, May 17-21, 2010.
49. Invited keynote speaker, delivered by S. T. Yau (Harvard) on behalf of three of us: David Gu and F. Luo and S. T. Yau, Thirteenth IMA Conference on Mathematics of Surfaces, University of York, UK, September 7-9, 2009. Title of the talk: Recent advances in computational conformal geometry.
50. Invited speaker, 2 lectures, Workshop on low-dimensional manifolds, East China Normal University, Shanghai, China, July 7-14, 2009.
51. Invited speaker, Interactions Between Hyperbolic Geometry, Quantum Topology and Number Theory, Columbia University, New York, June 15-19, 2009.
52. Invited speaker, Oberwolfach workshop on discrete differential geometry, Jan. 10-17, 2009.
53. Colloquium speaker, Arizona State University, Feb. 14, 2009.
54. Invited AMS special session speaker, AMS meeting at Washington DC. Jan. 5-6, 2009.
55. Colloquium speaker, Temple University, Nov. 22, 2008.
56. Invited speaker, Ricci flow in mathematics and physics, University of Strassbourg, France, Sept. 11-13, 2008.
57. Invited speaker, Geometry of Teichmuller spaces and moduli spaces of curves. Hangzhou, China, July 14-20, 2008,
58. Invited speaker, Transformation groups and orbifolds. Hangzhou, China, June 30-July 11, 2008.
59. Invited speaker, Mini-Symposia, IEEE International Conference on Shape Modeling and Applications, State University of New York, Stony Brook, June 4, 2008.
60. Invited speaker, bay area topology seminar, Univ. of California, Davis. May 13, 2008.
61. Colloquium speaker, Oklahoma State University. April 25, 2008.
62. Invited plenary speaker, The 4-th International Congress of Chinese Mathematicians, Hangzhou, China, Dec. 17-22, 2007.

63. Invited speaker, Second Time Around the Volume Conjecture, Louisiana State University, Baton Rouge, LA, May 30 - June 3, 2007.
64. Invited speaker, Braids and their ramifications, Cortona, Italy, May 20-26, 2007.
65. Invited speaker, Pacific Northwest Geometry Seminar, University of Utah, April 28-30, 2007.
66. Invited speaker, special session in AMS annual meeting, New Orleans, January 8, 2007.
67. Invited speaker, Texas Geometry and Topology Conference, Rice University, Houston, October, 2006.
68. Invited speaker, Georgia Topology Conference, Athens, Georgia, May 17-21, 2006.
69. Invited speaker, Geometric Group Theory on the Gulf Coast Conference, Mobile, Alabama, March, 2006.
70. Invited speaker, workshop on discrete differential geometry, Oberwolfach, Germany, March 2006.
71. Colloquium speaker, Lehigh University, Oct. 2005.
72. Colloquium speaker, Beijing Normal University, Beijing, China, July, 2005.
73. Invited speaker, Georgia Topology conference, Athens, Georgia, June, 2005.
74. Invited speaker, workshop on 3-manifolds and complexity, Cortona, Italy, February 23-27, 2005.
75. Invited speaker, Hong Kong Geometry Colloquium, Chinese University of Hong Kong, Hong Kong, Jan. 2005.
76. Colloquium speaker, Chinese University of Hong Kong, Hong Kong, Dec. 2004.
77. Invited speaker, International Congress of Chinese Mathematician, Hongkong, Dec. 2004.
78. Colloquium speaker, Oklahoma State University, Oklahoma, October 2004.
79. Invited speaker, Workshop in geometric topology, Peking University, Beijing, July 2004.
80. Colloquium speaker, The Capital Normal University, Beijing, July 2004.
81. Colloquium speaker, Indiana University, Bloomington, November 2003.
82. Colloquium speaker, University of Iowa, Iowa City, April 2003.
83. Invited speaker, special session in AMS regional meeting, New York, April 2003.

84. Invited speaker, special session in AMS annual meeting, Baltimore, Jan. 2003.
85. Colloquium speaker, Temple University, Oct. 2002.
86. Colloquium speaker, University of California, Riverside, May 2002.
87. Invited speaker, Geometry and topology in dimensions 3 and 4, Ohio State University, March 2002.
88. Invited speaker, special session in American Mathematical Society regional meeting, Ann Arbor, Michigan, March, 2002.
89. Colloquium speaker, University of Virginia, Feb. 7, 2002.
90. Invited speaker (45 minutes), International Congress of Chinese Mathematicians, Taiwan, December 2001.
91. Invited speaker, Knots in Montreal, a conference at UQAM, Montreal, Canada, April 2001.
92. Invited speaker, special session in American Mathematical Society regional meeting, New York City, November 2000.
93. Invited speaker, special session in American Mathematical Society annual meeting, Washington D.C., January, 2000.
94. Colloquium speaker, State University of New York, Buffalo, November 1999.
95. Colloquium speaker, Oklahoma State University, Stillwater, Oklahoma, October 1999.
96. Invited speaker, Ahlfors-Bers Colloquium, SUNY Stony Brook, Nov. 1998.

Updated: March 2020