CHAOHUI ZHANG

Department of Mathematics, Morehouse College
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EDUCATION

Ph.D. in Mathematics, 1995, State University of New York at Stony Brook, New York
M. S. in Mathematics, 1987, Fudan University, P. R. China
B. S. in Computer Science, 1984, Fudan University, P. R. China

PROFESSIONAL TEACHING EXPERIENCE

08/04-current Tenure-track assistant professor, Department of Mathematics, Morehouse College, Atlanta, GA

08/03-05/04 Temporary assistant professor, Department of Mathematics, Georgia Southern University, Statesboro, GA

08/03-05/04 Online mathematics instructor, Southern New Hampshire University, Concord, NH

08/02-08/03 Instructor in Mathematics Department of Daniel Webster College, Nashua, MA

02/02-08/02 Instructor, Xintra Computer Training Institute, Lowell, MA

06/96-02/02 Career in industry, computing networking and scientific computation 08/89-06/96 Instructor and Ph. D. Candidate in Department of Mathematics, SUNY at Stony Brook, Stony Brook, NY

06/84-08/89 Lecturer in Department of Computer Science/Mathematics, Fudan University, Shanghai, P. R. China

08/80-06/84 Lecturer in Department of Computer Science/Mathematics, Fudan University, Shanghai, P. R. China

MAJOR/MINOR INTERESTS

MAJOR – Complex Analysis, Riemann Surfaces, Quasiconformal Mappings, Teichmüller Spaces, Mapping Class Groups, and Hyperbolic Geometry
MINOR – Geometry and Low-Dimensional Topology

THESIS

On Teichmüller and Bers fiber spaces, SUNY at Stony Brook, Stony Brook, NY, June 1995

PRESENTATIONS

1. C. Zhang, *An asymptotic property of point-pushing pseudo-Anosov maps,* 2012 HUIC Hawaii University International Conferences on Mathematics And Engineering Technology, July 31, to August 2, 2012

2. C. Zhang, *Pseudo-Anosov maps and pairs of filling simple closed geodesics on Riemann surfaces,* ICMD 2010-11, Allahabad, INDIA, Dec 31, 2010 – Jan 3, 2011

3. C. Zhang, *Hyperbolic lengths of filling geodesics of Riemann surfaces,* AMS-SMS joint meeting, Shanghai, China, Dec. 2008

4. C. Zhang, *Singularities of quadratic differentials and absolutely extreme Teichmüller mappings defined by Dehn twists,* Morehouse College, May 2007

5. C. Zhang, *Mapping classes of Riemann surfaces,* Emory University, 2006

6. C. Zhang, *Mapping classes and Teichmüller spaces,* Emory University, 2006

7. C. Zhang, *Some remarks on Bers fiber spaces,* AMS Meeting at Atlanta, 2005

8. C. Zhang, *Mapping classes and Bers fiber spaces,* Zhongshan University, Guangzhou, China, 2005

9. C. Zhang, *Structures of mapping class groups,* Shuzhou University, Shuzhou, China, 2005

10. C. Zhang, *Mapping classes and their projections,* Fudan University, Shanghai, China, 2005

11. C. Zhang, *On Bers fiber spaces,* Morehouse College, March, 2004

12. C. Zhang, *Mapping class groups with applications to Teichmüller spaces,* Nova University, FL, 2004

13. C. Zhang, *Bers fiber spaces and Teichmüller spaces,* Georgia Southern University, September, 2003

14. C. Zhang, *Bers fiber spaces,* Daniel Webster College, NH, 2002

15. C. Zhang, *Spoiler detecting,* Harvard-Smithsonian Computer Center for Astrophysics, Cambridge, MA, 2001

16. C. Zhang, *Bers fiber spaces and Teichmüller spaces,* CUNY, NY, 1995

17. C. Zhang, *On Earle–Kra conjecture,* AMS Meeting at Oklahoma State University, Stillwater, OK, 1995

PUBLICATIONS

(A) PUBLISHED/ACCEPTED PAPERS

1. C. Zhang, *On the Bers fiber spaces,* Ann. Acad. Scien. Fennica, Vol. 24, (1999), 353-396

2. C. Zhang, *On Isomorphism of Bers fiber spaces,* Ann. Acad. Scien. Fennica, Vol. 22, (1997), 255-274

3. C. Zhang, *Non-extendibility of Bers isomorphism,* Proc. Amer. Math. Soc. Vol. 123, No. 8, August (1995), 2451-2458

4. C. Zhang, *Some remarks on Bers fiber spaces,* Complex Variables and Applications, Vol. 49, No. 10, (2004), 731-738

5. C. Zhang, *Hyperbolic mapping classes and their lifts to the Bers fiber space,* Chinese Ann. Math. Ser. B, Vol. 28, No. 1, January, (2007), 55-66

6. C. Zhang, *Modular transformations of Bers fiber spaces,* Complex Variables and Applications, Vol. 50, No. 3, (2007), 217-227

7. C. Zhang (with X. Liu), *A Resolution of some mapping classes,* Acta Math. Sinica, Vol. 50, No. 5, September, (2007), 1141-1150

8. C. Zhang, *Hyperbolic lengths of filling geodesics on punctured Riemann surfaces,* Osaka J. Math. 45, (2008), 773-787

9. C. Zhang, *Singularities of quadratic differentials and extremal Teichmüller mappings defined by Dehn twists,* J. Aust. Math. Soc. Vol. 3, (2009), 275-288

10. C. Zhang, *On filling closed geodesics of hyperbolic punctured Riemann spheres,* Math. Nachr. 282, No. 9, (2009), 1342-1353

11. C. Zhang, *Some remarks on Thurston's constructions of pseudo-Anosov mapping classes of Riemann surfaces,* Chinese Ann. of Math. Ser. B Vol. 29 No. 1, January, (2008), 85-94

12. C. Zhang, *Commuting mapping classes and their actions on the circle at infinity,* Acta Math Sinica, Vol. 52, No. 3, May, (2009), 471-482

13. C. Zhang, *Pseudo-Anosov mapping classes and their representations by products of two Dehn twists,* Chinese Ann. Math. Ser. B Vol. 30, No. 3, May, (2009), 281-292

14. C. Zhang, *Pseudo-Anosov maps and fixed points of boundary homeomorphisms compatible with a Fuchsian group,* Osaka J. Math. Vol. 46, No. 3, September, (2009), 783-798

15. C. Zhang, *A lower bound for dilatations of certain class of pseudo-Anosov maps of Riemann surfaces,* Journal of Mathematical Sciences, the University of Tokyo, 16 (2009), 441-460

16. C. Zhang, *On stabilizers of some Teichmüller disks in pointed mapping class groups,* Glasgow Mathematical Journal, 52, (2010), 593–604

17. C. Zhang, *On Products of Pseudo-Anosov maps and Dehn twists of Riemann surfaces with punctures,* J. Aust. Math. 88 (2010), 413–428

18. C. Zhang, *Quasi-geodesics in Bers fiber spaces,* accepted for publication in Advances and Applications in Mathematical Sciences, (2010)

19. C. Zhang, *A program of producing pseudo-Anosov maps via Dehn twists and point-push maps along closed geodesics on Riemann surfaces.* Proc. Dynamic Systems ans applications, Vol 4, (2010).

20. C. Zhang, *A new construction of p[seudo-Anosov maps on punctured Riemann surfaces,* JP Journal of Geometry and Topology, Vol. 11, No. 1, (2011), 33-52

21. C. Zhang, *Dehn twists and products of mapping classes of Riemann surfaces with punctures,* Chinese Ann. Math. Ser. B Vol. 32, No. 6, May, (2011), 885-894

22. C. Zhang, *On pseudo-Anosov maps with small dilatations on punctured Riemann spheres,* JP Journal of Geometry and Topology, Vol. 11, No. 2, (2011), 33-52

23. C. Zhang, *A characterization of pseudo-Anosov maps with minimum dilatations on punctured Riemann spheres,* Proceedings of the International Conference on Dynamic Systems and Applications, Vol. 6, (2011)

24. C. Zhang, *Dehn twists combined with pseudo-Anosov maps,* Kodai Mathematical Journal Vol. 35, No. 3, (2011), 367-382

25. C. Zhang, *On distances between curves in the curve complex and point-pushing pseudo-Anosov homeomorphisms,* JP Journal of Geometry and Topology, Vol. 12, No. 2, (2012), 173-206

26. C. Zhang, *Invariant Teichmüller disks under hyperbolic mapping classes,* Hiroshima Mathematical Journal, Vol. 42, No. 2, (2012), 169-187

27. C. Zhang, *Pseudo-Anosov maps and pairs of filling simple closed geodesics on Riemann surfaces,* to appear in Tokyo Journal of Mathematics, (2012)

28. C. Zhang, *On upper bounds for the minimum translation lengths of point-pushing pseudo-Anosov maps on Riemann surfaces* to appear in Far East Journal of Mathematical Sciences, (2012)

PAPERS IN SUBMISSION

29. C. Zhang, *On algebraic relations between Dehn twists and point-pushing mapping classes on Riemann surfaces,* Chinese Ann. Math. Ser. B (2012)

30. C. Zhang, *On the minimum dilatation of point-pushing pseudo-Anosov maps on Riemann surfaces with punctures,* Kyoto Mathematical Journal, (2012)

31. C. Zhang, *Length setimates for simple and filling closed geodesics on hyperbolic Riemann surfaces,* J. Aust. Math. Soc, (2012)

32. C. Zhang, *Pseudo-Anosov maps and pairs of filling simple closed geodesics on Riemann surfaces, II* Tokyo Journal of Mathematics, (2012)

33. C. Zhang, *Filling words in fundamental groups of Riemann surfaces,* Studia Scientiarum Mathematicarum Hungaria, (2012)

34. C. Zhang, *A memorandum of length spectrum metrics of Teichmuller spaces,* 2012

GRANTS

1. Served as principle investigator/conference director for MAA/NSF Regional Undergraduate Mathematics Conference, was awarded and completed NSF grant (DMS0241090) for 2006 Walton Symposium at Morehouse College

2. Served as principle investigator/conference director for MAA/NSF Regional Undergraduate Mathematics Conference, was awarded and completed NSF grant (DMS0241090) for 2007 Walton Symposium at Morehouse College

3. Served as principle investigator/conference director for MAA/NSF Regional Undergraduate Mathematics Conference, was awarded and completed NSF grant (DMS0241090) for 2008 Walton Symposium at Morehouse College

4. Served as principle investigator/conference director for MAA/NSF Regional Undergraduate Mathematics Conference, was awarded and completed NSF grant (DMS0241090) for 2009 Walton Symposium at Morehouse College

SERVICES FOR MATHEMATICS DEPARTMENT

1. Organized and coordinated (with Dr. Bozeman and Dr. Pederson) 2006 Walton Symposium at Morehouse College

2. Organized and coordinated (with Dr. Bozeman and Dr. Pederson) 2007 Walton Symposium at Morehouse College

3. Organized and coordinated (with Dr. Bozeman and Dr. Pederson) 2008 Walton Symposium at Morehouse College

4. Organized and coordinated (with Dr. Bozeman and Dr. Gryc) 2009 Walton Symposium at Morehouse College

5. (Work with Dr. Bozeman and Dr. Pederson) Editor for Volume 3 of Proceedings of the Harriett J. Walton Symposium on Undergraduate Mathematics Research

6. (Work with Dr. Bozeman and Dr. Pederson) Editor for Volume 4 of Proceedings of the Harriett J. Walton Symposium on Undergraduate Mathematics Research

7. (Work with Dr. Bozeman and Dr. Pederson) Editor for Volume 5 of Proceedings of the Harriett J. Walton Symposium on Undergraduate Mathematics Research

8. (Work with Dr. Bozeman and Dr. Pederson) Editor for Volume 6 of Proceedings of the Harriett J. Walton Symposium on Undergraduate Mathematics Research

9. (Work with Dr. Bozeman and Dr. W. Gryc) Managing editor for Volume 7 of Proceedings of the Harriett J. Walton Symposium on Undergraduate Mathematics Research

10. Organized research seminar (fall 2004, spring 2005 and fall 2007) for the department of mathematics

11. Helped the hiring committee to hire new faculty members in the department, 2004–2009

SERVICES FOR MOREHOUSE STUDENTS

1. Served as a research advisor for many undergraduate research projects in mathematics by seniors at Morehouse College during the years 2004-2007

2. Wrote a recommendation letter for various students during the year 2005-2006

3. Served as a member of the Undergraduate Research Committee and the Mathematics Colloquium Committee, 2006–current

4. Served as a member of the Senior seminary/undergraduate research committee and Mathematics Colloquium Committee/Seminar, 2005–current

SERVICES FOR ACADEMIC COMMUNITY

1. Served as a reviewer for Zentralblatt MATH
Thick-thin decomposition of quadratic differentials by Rafi Kasra, 2007

2. Served as a referee for the journal *Acta Math Senica*
An Isomorphism theorem for Teichmüller curves by Y. Shen and D. Ding, 2005

3. Served as a referee for the Journal *Chinese Annual of Math*
Isomorphisms of Fiber spaces over Teichmüller spaces by Y. Shen and F. Shi, 2005

4. Served as a referee for the Journal *Chinese Journal of Contemporary Mathematics*
Characterization of Grötzsch's problem in a domain by H. Zhu, Z. Zhou and C. He, 2007

INDUSTRY EXPERIENCE 06/96-02/02

Sr. Software Engineer, Science Dynamics, Inc./Sr. Software Engineer, Iperia, Inc., Burlington, MA/ Sr. Software Engineer, Comverse Network Systems, Inc., Andover, MA/ Software Engineer, Harvard-Smithsonian Computer Center for Astrophysics, Cambridge, MA