

## KASRA RAFI

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### EMPLOYMENT

L.E. Dickson Instructor, University of Chicago, 2007-present.  
On leave to attend the program "Teichmüller theory and Kleinian group" at MSRI.  
Postdoctoral Fellow, University of Connecticut, 2004-2007.  
Ky Fan Visiting Assistant Professor, University of California, Santa Barbara, 2001-2004.

### EDUCATION

Ph.D., Mathematics, State University of New York at Stony Brook, 2001.  
Thesis Title: *Teichmüller geodesics and hyperbolic 3-manifolds*.  
Advisor: Yair Minsky.  
B.Sc., Mathematics, Sharif Institute of Technology (Tehran, Iran), 1995.

### FIELDS OF INTEREST

Teichmüller theory, mapping class groups, hyperbolic 3-manifolds, geometric group theory.

### PAPERS

#### Published/Accepted for Publication

*Lines of minima and Teichmüller geodesics*,  
with Young-Eun Choi and Caroline Series, to appear, Geometric and Functional Analysis.  
*Comparison between Teichmüller and Lipschitz metrics*,  
with Young-Eun Choi, to appear, Journal of the London Mathematical Society.  
*A combinatorial model for the Teichmüller metric*,  
to appear, Geometric and Functional Analysis.  
*Thick-thin decomposition for quadratic differentials*,  
Mathematics Research Letters **14** (2007), no 2, 333-341  
*A characterization of short curves of a Teichmüller geodesic*,  
Geometry & Topology **9** (2005)179–202.

#### Preprints

*Lines of minima are quasi-geodesics*,  
with Young-Eun Choi and Caroline Series, preprint.  
*On distinguishing curve complexes*,  
with Saul Schleimer, preprint.  
*Covers and the curve complex*,  
with Saul Schleimer, e-print: arXiv:math.GT/0701719.  
*Divergence rate of geodesics in Teichmüller space and mapping class groups*,  
with Moon Duchin, e-print: arXiv:math.GT/0611359.  
*Teichmüller geodesics do not backtrack*,  
preprint.

See <http://www.math.uchicago.edu/~rafi/research/research.html> for copies of all of my papers.

## SELECTED INVITED TALKS

### Conferences

- MSRI, Introduction to Teichmüller Theory and Kleinian Groups, August 2007.
- Warwick Mathematics Institute, Workshop on Hyperbolic Structures on 3-Manifolds and Large-Scale Geometry of Teichmüller Space, July 2007.
- Center of Mathematical Science, Zhejiang University, International Conference on Geometric Topology and Geometric Analysis, July 2007.
- Peking University, Geometric Topology Conference, June 2007.
- Brown University, Geometry and Dynamics in Surfaces and 3-Manifolds, May 2007.
- Warwick Mathematics Institute, Workshop on Analytic Aspects of Low-Dimensional Geometry, August 2006.
- Fields Institute, Hyperbolic Geometry Workshop, May 2006.
- University of Michigan, Ahlfors-Bers Colloquium, May 2005.
- University of Connecticut, Ahlfors-Bers Colloquium, October 2001.

### Seminars

- Cornell University, University of Michigan, City University of New York, Columbia University, SUNY at Stony Brook, Brown University, University of Maryland, University of California at Davis, Princeton University, Yale University, Rutgers University, University of Warwick, California Institute of Technology, University of Illinois at Chicago, University of Southern California.

### AMS Meetings

- Northwestern University, AMS Section Meeting, October 2004.
- University of Southern California, AMS Section Meeting, April 2004.
- University of Michigan, AMS Section Meeting, March 2002.

## HONORS

- Ky Fan Visiting Assistant Professorship, UCSB, 2001-2004.
- James Simons Prize for Excellence in Research, SUNY at Stony Brook, 2001.
- Silver Medal, International Mathematics Olympiad, Moscow, 1992.

## PROFESSIONAL ACTIVITIES

- Co-organizer of the special session “Teichmüller Theory and Hyperbolic Geometry” at the AMS meeting at the University of Connecticut, October 2006.
- Reviewer for Mathematics Reviews
- Referee for *Inventiones Mathematicae*, *Geometriae Dedicata*, *Israel Journal of Mathematics*, *Geometry and Topology*, *Topology and its Applications* and *Transactions of the American Mathematical Society*
- Mentor for Association for Women in Mathematics (AWM) Mentor Network.

## TEACHING EXPERIENCE

### Undergraduate courses:

- Problem-solving, pre-calculus, single and multivariable calculus, ordinary and partial differential equations, logic and proofs, linear algebra, probability, abstract algebra, complex analysis, topology and knot theory.

### Graduate courses:

- Algebra for teachers, geometry for teachers and Kleinian groups.

## REFERENCES

- Francis Bonahon, University of Southern California, [fbonahon@math.usc.edu](mailto:fbonahon@math.usc.edu).
- Alex Eskin, University of Chicago, [eskin@math.uchicago.edu](mailto:eskin@math.uchicago.edu).
- David Gabai, Princeton University, [gabai@math.princeton.edu](mailto:gabai@math.princeton.edu).
- Howard Masur, University of Illinois at Chicago, [masur@math.uic.edu](mailto:masur@math.uic.edu).
- Yair Minsky, Yale University, [yair.minsky@yale.edu](mailto:yair.minsky@yale.edu).
- Stuart Sidney, University of Connecticut, [sidney@math.uconn.edu](mailto:sidney@math.uconn.edu) (teaching).