

Gaven J. Martin

PUBLICATIONS

July 2, 2007

1 Thesis

The geometry of quasiconformal mappings, (Chairman : F.W. Gehring).
[winner of the Myers Prize]

2 Books

1. *Analysis and Applications* (Edited book, with B. Thompson) Proceedings of the Centre for Mathematics and its Applications, ANU, Canberra, 1994.
2. *Geometric Function Theory and Non-linear Analysis* (with T. Iwaniec) Oxford Mathematical Monographs. The Clarendon Press, Oxford University Press, New York, 2001. xvi+552. ISBN: 0-19-850929-4
3. *The Beltrami Equation* (with T. Iwaniec) To appear, Memoirs of the Amer. Math. Soc., 2007 (110pp)
4. *Elliptic Partial Differential Equations and Quasiconformal Mappings* (with K. Astala and T. Iwaniec) To appear, Princeton University Press (650pp)

3 Already Published.

1. *Quasiconformal and bilipschitz homeomorphisms, uniform domains and the quasihyperbolic metric.* Trans. Amer. Math. Soc. **292** (1), (1985), 169–191.
2. *Discrete quasiconformal groups that are not the quasiconformal conjugates of Möbius groups.* Ann. Acad. Sci. Fenn. Ser. A.I. **11** (1986), 179–202.
3. *The quasihyperbolic metric and associated estimates on the hyperbolic metric,* (with B.G.Osgood). J. d'Analyse Math. **47**, (1986), 37–53.
4. *Discrete quasiconformal groups I,* (with F.W. Gehring) Proc. London Math. Soc. (3) **55** (1987), 331 - 358.

5. *Discrete Convergence groups*, (with F.W. Gehring) Complex Analysis 1, Lecture Notes in Math #**1275**. Springer Verlag (1987), 158–168.
6. *The geometry of the quasihyperbolic metric*. Paper presented to the Finnish Math. Society (not refereed), Abstract: Eukleides, J. Finnish Math. Soc. February 85.
7. *Quasiconformal actions on domains in space*. Holomorphic Functions and Moduli, Springer Verlag (1988), 87–111.
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10. *The matrix and chordal norms of Möbius transformations*, (with F.W. Gehring). Complex Analysis, Birkhäuser (1988), 51–59.
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12. *Generalizations of Kleinian groups*, (with F.W. Gehring). Mathematical Sciences Research Institute Report # 0659 (1986), 1–40 (not refereed)
13. *Group actions on S^2* , (with R. Skora). Amer. J. Math. **111**, (1989), 387–402.
14. *Stability and extremality in Jørgensen's inequality*, (with F. W. Gehring). Complex Variables **12** (1989), 277–282.
15. *Iteration theory and Discreteness in Kleinian groups*, (with F.W. Gehring). Bull. Amer. Math. Soc., Vol. **2** No. 1, (1989), 57–63.
16. *Infinite group actions on spheres*, Revista Mat. Iberoamericana, **4**, No. 3–4 (1988), 407–451.
17. *On discrete Möbius groups in all dimensions: A generalization of Jørgensen's inequality*. Acta Math., **163** (1989), 253–289.
18. *Balls in hyperbolic manifolds*. J. London Math. Soc. (2) **40** (1989), 257–264.
19. *Quasiconformal mappings and capacity*, (with T. Iwaniec). Indiana Math. J. **40** (1991) 101–122.
20. *Mediatrice de deux arcs de Quasicercle*, (with G. David and S. Semmes). J. d'Analyse Math. **55** (1990), 250–270.

21. *The Beurling-Ahlfors transform in \mathbf{R}^n and related singular integrals*, (with T. Iwaniec). Institut des Hautes Etudes Scientifiques Sept. (1990) 1–40 (not refereed)
22. *Inequalities for Möbius transformations and discrete groups*, (with F.W. Gehring). J. Reine Angew. Math. **418** (1991), 31–76.
23. *Some universal constraints for discrete Möbius groups*, (with F.W. Gehring). Paul Halmos; Celebrating 50 Years of Mathematics. Ed. F.W. Gehring and J.H. Ewing, Springer-Verlag, 1991, 205–220.
24. *The volume of regula tetrahedra and sphere packing in hyperbolic 3-space*. Math. Chronicle, **20** (1991) 127–147.
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26. *Quasiregular mappings in even dimensions*, (with T. Iwaniec). Acta Math. **170** (1993) 29–81
27. *Axial distances in Kleinian groups* (with F.W. Gehring) Proc. Amer. Nat. Acad. Sci **89** (1992) 1999–2001
28. *Chebyshev polynomials and discrete groups*, (with F.W. Gehring). Proc. Int. Conf. Complex Analysis, International Press, (1992) 114–125
29. *Analytic disks and pluripolar sets* (with N. Levenberg and E. Poletski) Indiana Math. J. **41** (1992) 515–532
30. *Convergence groups with an invariant component pair*, (with P. Tukia). Amer. J. Math. **114** (1992). 1049–1077
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32. *Algebraic convergence of discrete isometry groups of negative curvature*, Pacific J. Math. **160** (1992) 109–127
33. *Holomorphic Motions* , (with K. Astala) University of Helsinki Report Series **8** (1992) 1–18 (not refereed)
34. *The iterated commutator in a Fuchsian group*, (with F.W. Gehring). Complex Variables **21** (1993) 207–218
35. *Cusps, triangle groups and hyperbolic volume*, (with M.D.E. Conder). J. Australian Math. Soc., **55**, (1993), 149–182
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38. *On the hyperbolic 3-fold of minimal co-volume* (with F.W. Gehring) Mathematical Research Letters, **1** (1994) 107–115
39. *The persistence of angle* N.Z. Journal of Math. **23** (1994), 77–82
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69. *The Liouville Theorem* (with T. Iwaniec) Analysis and Topology, World Scientific (1998), 339–362.
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77. *2-generator arithmetic Kleinian groups with quadratic invariant trace field*, (with C. Maclachlan and J. McKenzie). NZ J. Math., **29**, (2000), 203–210.
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93. *Mappings of finite distortion: $L^n \log^x L$ -integrability*, (with T. Iwaniec, P. Koskela and C. Sbordone), J. London Math. Soc., (2) **67**, (2003), 123–136.
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100. *Beltrami Systems and the Hilbert-Smith Conjecture*, Proc. Conf. “Partielle Differentialgleichungen”, Oberwolfach Report, 33/2005, 42–44.
101. *Extremal Mappings of Finite Distortion* (with T. Iwaniec, K. Astala and J. Onninen), *Proc. London Math. Soc.*, **91**, (2005), 655–702.
102. (p, q, r) -Kleinian groups and the Margulis constant (with F.W. Gehring). Complex analysis and dynamical systems II, *Contemp. Math.*, **382**, Amer. Math. Soc., Providence, RI, (2005), 149–169.
103. *Quasiconformal groups with small dilatation*, **II**, (with P. Bonfert-Taylor), *Complex Var. Elliptic Equ.* 51 (2006), no. 2, 165–179.
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106. *Maximal symmetry groups of hyperbolic 3-manifolds*, (with M.D.E. Conder and A. Torstenson) *New Zealand J. Math.*, **35**, (2006), 37–62.
107. *The generalized Lichnerowicz problem, Uniformly quasiregular mappings and space forms*, (with K. Peltonen and V. Mayer) *Proc. Amer. Math. Soc.*, **134**, (2006), 2091–2097.
108. *Limit functions for convergence groups and uniformly quasiregular maps* (with A. Hinkkanen), *J. London Math. Soc.*, **73**, (2006), 716–726.

4 Accepted for Publication

1. *Schottky's Theorem on Conformal Mappings Between Annuli*, (with T. Iwaniec, K. Astala and J. Onninen), Proceedings of the Third International Conference on Complex Analysis and Dynamical Systems, held in honor of D. Aharonov, L. Aizenberg, S Krushkal and U. Srebro in Nahariya, Israel, in January, 2006. Contemporary Math.
2. *Quasiconformal homogeneity, amenable covers, Teichmüller mappings, quasiconformal homogeneity, and amenable covers of Riemann surfaces* (with P. Bonfert-Taylor, A. Reid, E. C. Taylor) Pure and Applied Math. Quarterly.
3. *Quasiregular self mappings of manifolds and hyperbolic groups* (with M. Bridson and A. Hinkkanen). Compositio Math.
4. *The $(6, p)$ -arithmetic Kleinian groups, $p \geq 2$* , (with C. Maclachlan). Pure and Applied Math. Quarterly.

5 Preprints and Papers Submitted

1. *Examples of uniformly quasiregular mappings whose Fatou set has infinitely many components*, (with K. Peltonen)
2. *Deformations with smallest mean distortions and the Nitsche conjecture*, (with T. Iwaniec and K. Astala)
3. *Deformations with smallest mean distortion and applications*, (with T. Iwaniec and K. Astala)
4. *Julia sets of polynomial semigroups* (with A. Hinkkanen)
5. *The Dynamics of Semigroups of Rational Mappings II*, (with A. Hinkkanen)
6. *Minimal Co-Volume Hyperbolic Lattices, I: spherical points of a Kleinian group* (with F.W. Gehring). Submitted
7. *Minimal Co-Volume Hyperbolic Lattices, II: simple torsion in a Kleinian group* (with T. Marshall)
8. *The (p, q) -arithmetic Kleinian groups, $p \geq q \geq 6$* , (with C. Maclachlan).
9. *Conformal mappings from the upper-half plane to fundamental domains on the hyperbolic plane*, (with M. Harmer and B. Pavlov) Math Report Series 499, University of Auckland.
10. *Compactness and inequalities for discrete groups* (with T. Evans).

11. *The Virtual Hopf Property* (with M. Bridson, D. Groves and J. Hillman).
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