

Publications, August 2009

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Monograph

1. *Metric spaces of non-positive curvature* (with A. Haefliger), Grundlehren der Mathematischen Wissenschaften, Vol. 319, Springer-Verlag, Heidelberg, 1999.

Refereed Articles

1. *The Quadratic Isoperimetric Inequality for Mapping Tori of Free-Group Automorphisms* (with D. Groves), Mem. Amer. Math. Soc., vol. 578, American Math. Soc., Providence RI, 2009.
2. *Subgroups of Direct Products of Limit Groups* (with J. Howie, C. Miller and H. Short), Annals of Math., vol. 170 (2009), in press.
3. *Intrinsic versus extrinsic diameter for Riemannian filling discs and van Kampen diagrams* (with T. Riley), J. Diff. Geom. 82 (2009), no. 1, 115-154.
4. *Infinite groups with fixed point properties*, (with G. Arzhantseva, T. Januszkiewicz, I.J. Leary, A. Minasyan, J. Swiatkowski), Geom. Topol. 13 (2009), no. 3, 1229-1263.
5. *Structure and finiteness properties for subdirect products of groups* (with C. Miller), Proc. Lond. Math. Soc. (3) 98 (2009), no. 3, 631-651.
6. *Direct factors of profinite completions and decidability*, J. Group Theory 12 (2009), no. 1, 151-156.
7. *The Chabauty space of closed subgroups of the three-dimensional Heisenberg group* (with P. de la Harpe and V. Klepstyn), Pacific J. Math. 240 (2009), no. 1, 1-48.
8. *Snowflake groups, Perron-Frobenius eigenvalues and isoperimetric spectra* (with N. Brady, M. Forester and K. Shankar, Geom. Topol., 13 (2009), 141-188.
9. *Subgroup separability in residually free groups* (with H. Wilton), Math. Z. 260 (2008), no. 1, 25-30.

10. *A condition that prevents groups from acting non-trivially on trees*, *Geom. Topol. Monographs* 14 (2008) 129-133.
11. *Putative relation gaps* (with M. Tweedale), *Monog. L'Eneign. Math.*, 40 (2008), 46-49.
12. *Quasiregular self mappings of manifolds and word hyperbolic groups* (with A. Hinkkanen and G. Martin), *Compositio Math.*, 143 (2007), no. 6, 1613-1622.
13. *Deficiency and abelianized deficiency of some virtually free groups* (with M. Tweedale), *Math. Proc. Camb. Phil. Soc.*, 143 (2007), no. 2, 257-264.
14. *Subgroups of direct products of elementarily free subgroups* (with J. Howie), *Geom. Funct. Anal. (GAFA)* 17 (2007), no. 2, 385-403.
15. *Limit groups, positive-genus towers and measure-equivalence* (with M. Tweedale and H. Wilton), *Ergodic Theory Dynam. Systems* 27 (2007), no. 3, 703-712.
16. *Free and fragmenting filling length* (with T. Riley), *J. Algebra* **307** (2007)
17. *Normalisers in limit groups* (with J. Howie), *Math. Ann.* 337 (2007), 385-394.
18. *Non-positive curvature and complexity for finitely presented groups* *International Congress of Mathematicians. Vol. II*, 961-987, *Eur. Math. Soc.*, Zurich 2006.
19. *Automorphism groups of free, surface, and free-abelian groups* (with K. Vogtmann), *Problems on mapping class groups and related topics*, 301-316, *Proc. Sympos. Pure Math.*, 74, *Amer. Math. Soc.*, Providence, RI, 2006.
20. *On the growth of groups and automorphisms*, *Intl. J. Alg. Comp.* **15** (2005), 869-874.
21. *Conjugacy of finite subsets in hyperbolic groups* (with J. Howie), *Intl. J. Alg. Comp.*, **15** (2005), 725-756.
22. *A note on the grammar of combings*, *Intl. J. Alg. Comp.*, **15** (2005), 529-535.
23. *Grothendieck's problems concerning profinite completions and representations of groups* (with F. Grunewald), *Annals of Math. (2)* **160** (2004), 359-373.
24. *Mapping class groups and outer automorphism groups of free groups are C^* -simple* (with P. de la Harpe), *J. Funct. Anal.*, **212** (2004), 195-205.

25. *Recognition of subgroups of direct products of hyperbolic groups* (with C. Miller), Proc. Amer. Math. Soc. 132 (2004), 59-65.
26. *Finite presentation of fibre products of metabelian groups*, (with G. Baumslag, D. Holt and C. Miller), J. Pure and Appl. Algebra **181** (2003), 15-22.
27. *The conjugacy and isomorphism problems for combable groups*, Math. Ann., **327** (2003), 305-314.
28. *Homomorphisms from automorphism groups of free groups* (with K. Vogtmann), Bull. London Math. Soc., **35** (2003), 785-792.
29. *Comings of groups and the grammar of reparameterisation*, Comment. Math. Helv., **78** (2003), 752-771.
30. *Context-free languages of sub-exponential growth* (with R. Gilman), J. Comput. System Sci. 64 (2002), 308-310.
31. *The subgroups of direct products of surface groups* (with J. Howie, C.F. Miller III, H. Short), Geometriae Dedicata 92 (2002), 95-103.
32. *The geometry of the word problem*, in "Invitations to geometry and topology", (M.R. Bridson and S.M. Salamon, eds.), OUP, Oxford 2002, pp. 29-91.
33. *On the subgroups of semihyperbolic groups*, in "Essays on geometry and related topics", Vol. 1, 85-111, Monogr. Enseign. Math., 38, Geneva, 2001.
34. *Malnormality is undecidable in hyperbolic groups* (with D. Wise), Israel J. Math. 124 (2001), 313-316.
35. *Length functions, non-positive curvature and the dimension of discrete groups*, Math. Res. Lett. 8 (2001), 557-567.
36. *Polynomial Dehn functions and the length of asynchronous automatic structures*, Proc. London Math. Soc. (3) 85 (2002), 441-466.
37. *The symmetries of outer space* (with K. Vogtmann), Duke Math. J. **106** (2001), 391-409.
38. *A remark about actions of lattices on free groups* (with B. Farb), J. Topology Appl., **110** (2001), 21-24.
39. *Automorphisms of the automorphism groups of free groups* (with K. Vogtmann), J. Algebra **229** (2000), 785-792.
40. *There is only one gap in the isoperimetric spectrum* (with N. Brady), Geom. Funct. Anal. (GAFA), **10** (2000), 1053-1070.
41. *Finiteness properties for subgroups of $GL(n, \mathbf{Z})$* . Math. Annalen, **317** (2000), 629-633.

42. *Fibre products, non-positive curvature and decision problems* (with G. Baumslag, C. Miller and H. Short), *Comm. Math. Helv.*, **75** (2000), 457-503.
43. *On the semisimplicity of polyhedral isometries*, *Proc. Amer. Math. Soc.*, **127** (1999), no. 7, 2143-2146.
44. *Doubles, finiteness properties of groups and quadratic isoperimetric inequalities*, *J. Algebra* **214** (1999), no. 2, 652-667.
45. *Asymptotic cones and polynomial isoperimetric inequalities*, *Topology* **38** (1999), no. 3, 543-554.
46. *Controlled embeddings into groups that have no non-trivial finite quotients*, *Geometry and Topology Monographs* **1** (1998), Epstein Birthday Schrift, (Rivin, Rourke, Series, eds.), International Press, 99-116.
47. *On the absence of cohomological finiteness in wreath products* (with G. Baumslag and K. Gruenberg), *J. Aust. Math. Soc.*, **64** (1998), 222-230.
48. *Fractional isoperimetric inequalities and subgroup distortion*, *J. Amer. Math. Soc.* **12** (1999), no. 4, 1103-1118.
49. *VH-complexes, towers, and subgroups of $F \times F$* (with D. Wise), *Math. Proc. Camb. Phil. Soc.*, **126** (1999), 481-497.
50. *Non-positive curvature in group theory*, in "Groups St. Andrews in Bath", *LMS Lecture Notes* 270 (1998), (eds. Campbell, Robertson, Smith), pp. 1-50.
51. *Subgroups of automatic groups and their isoperimetric functions* (with G. Baumslag, C. Miller and H. Short), *Jour. London Math. Soc.*, **56** (1997), 292-304.
52. *On the geometry of the automorphism group of a free group* (with K. Vogtmann), *Bull. London Math. Soc.*, **27** (1995), 544-552.
53. *A remark about combings* (with R. Gilman), *Intl. J. Alg. Comp.*, **3** (1993), 575-581
54. *On Hausdorff–Gromov convergence and a theorem of Paulin* (with G. Swarup), *L'Enseignement Math.*, **40** (1994), 267-289.
55. *Optimal isoperimetric inequalities for abelian-by-free groups*, *Topology*, **34** (1995), 547-564.
56. *The optimal isoperimetric inequality for torus bundles over the circle* (with S.M. Gersten), *Quart. J. Math.* **47** (1996), 1-24.

57. *Isoperimetric inequalities for the fundamental groups of torus bundles over the circle* (with C. Pittet), *Geom. Dedicata*, **49** (1994), 203-219.
58. *Formal language theory and the geometry of 3-manifolds*, (with R. Gilman), *Comm. Math. Helv.*, 1996, **71** (1996), 525-555.
59. *Regular combings, nonpositive curvature and the quasiconvexity of abelian subgroups*, *J. Pure and Appl. Alg.*, **88** (1993), 23-35.
60. *On the existence of flat planes in spaces of nonpositive curvature*, *Proc. Amer. Math. Soc.*, **123** (1995), 223-235.
61. *Semihyperbolic groups* (with J. Alonso), *Proc. London Math. Soc.*, **70** (1995), 56-114.
62. *On the geometry of paths in nilpotent groups* (with R. Gilman), *Proc. Edinburgh conference on group theory*, April 1993, (Duncan, Gilbert, Howie, eds.), *LMS Lecture Notes 204*, Camb. Univ. Press.
63. *Combing semidirect products and 3-manifold groups*, *Geom. and Funct. Anal. (GAFA)*, **3** (1993), 263-278.
64. *On the geometry of normal forms in discrete groups*, *Proc. London Math. Soc.*, **67** (1993), 516-616.
65. *Geodesics and curvature in metric simplicial complexes*, (PhD thesis) in "Group theory from a geometrical viewpoint", *Proc. ICTP, Trieste, Italy*, E. Ghys, A. Haefliger, A. Verjovsky (eds.), *World Scientific, Singapore*, 1991, pp. 373-463.

Papers accepted for publication

1. *The Schur multiplier, profinite completions and decidability*, arXiv:0907.5010, *Bull. London Math. Soc.*, to appear.
2. *Actions of automorphism groups of free groups on homology spheres and acyclic manifolds* (with K. Vogtmann), arXiv:0803.2062, *Comm. Math. Helv.*, to appear.
3. *Decision problems and profinite completions of groups*, arXiv:0810.0390, *J. Algebra*, to appear.
4. *Semisimple actions of mapping class groups on CAT(0) spaces*, arXiv:0908.0685, to appear in "The Geometry of Riemann Surfaces" (eds., F. P. Gardiner, G. Gonzalez-Diez and C. Kourouniotis), *LMS Lecture Notes 368*, Cambridge Univ. Press, Cambridge, 2010.

Book Chapter

1. *Geometric and combinatorial group theory*, Chap. IV.10 in the Princeton Companion to Mathematics, T. Gowers (editor), Princeton Univ. Press, Princeton NJ, 2008.

Edited Volumes

1. *Invitations to Geometry and Topology* (with S.M. Salamon), Oxford Graduate Texts in Mathematics **7**, 2003, pp. 327.
2. *Geometric and cohomological methods in group theory* (with P.H. Kropholler and I.J. Leary), London Math. Soc. Lecture Notes, vol 358, Cambridge University Press, Cambridge, 2009.